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ORIGINAL ARTICLES.

ARTICLE I.

THE RELATION BETWEEN SKIN DISEASES AND THE GENERAL HEALTH.[1]

By M. B. Hutchins, M.D., Lecturer on Diseases of the Skin, Atlanta Medical College, Atlanta, Ga.

The subject which I have chosen seems timely, from the fact that there exist, not alone among the general public, but I fear to some extent in the professional mind, views upon the subject of skin diseases which are deceptive to the patient, and must result in failure in treatment by the physician. The most common explanation of a skin disease is that it is a manifestation of "blood disorder." This vague and indefinite disposal of the question shows on the part of the patient a too thorough knowledge of the patent medicine literature which pervades the newspapers, periodicals, almanacs and circulars. On the part of the physician we prefer to believe that this "blood" theory is an extemporized answer to the question of causation, given, as many of our opinions must be, upon the idea that it is better to tell the patient something than nothing at all. For, despite the antiquity of the practice of medicine, we all know that there are yet many diseases the cause of which has not been definitely determined.

I hope to be able to avoid a too free use of technical terms in what follows, and to simply give the views, in general, of many leading authorities upon dermatology, and my own humble opinion formed in a much more limited experience. Naturally we seek the causes of skin diseases elsewhere as soon as we become convinced that the "blood" will not suffice. Animal and vegetable parasitic diseases, syphilis, the exanthemata, "new growths" of all kinds, simple or malignant, and diseases which are pretty definitely known to be due to certain micro-organisms are excluded so far as possible from consideration, and we limit our attention to purely eruptive skin diseases. A study of the department of "etiology" in works and articles upon skin diseases fails to reveal the origin of the "blood disease" theory. We find a monotonous repetition of the statement, that the cause of this or that skin disease is unknown, or an equally monotonous sameness of theory as to the possible causation, with here and there an individual view cropping out. We have had the school of "local origin," probably the result of the elder Hebra's teaching and the French (Bazin and Hardy being perhaps the originators), in which various skin eruptions were attributed to the "dartrous diathesis." The soundest doctrine is that which shows a willingness to admit both internal and external factors as causes in many cases, with the reservation that many originate with only one of these factors present; and the large majority with absolutely no evidence to prove either an internal or external cause which could be identified. My own belief and experience is that we may get the average of a number of persons with or without skin diseases, or eruptions, and the percentage of good general health will be as large in one class as the other. Duhring, under "Etiology," says:

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[1] Read before the State Medical Association of Georgia at Columbus, May 20, 1892.

"A large proportion of cutaneous diseases are intimately associated with derangement of the internal economy, and therefore strictly speaking symptomatic diseases." I do not think the rest of his work shows that he meant by this that a certain skin disease is always the symptom of a certain internal condition, nor that either is necessarily dependent upon the other. He says further that the line of demarcation between local and constitutional diseases cannot be a strict one, and that "general ill health, arising from a variety of causes, plays a conspicuous part both in the causation and continuation of cutaneous affections." From the younger Hebra we get almost an opposite view, in his discussion of the etiology of eczema. Eczema has very justly been called the "keystone of dermatology" (in the mind of many it is the entire arch). But to return to Hebra; he says: "Some attribute all to constitutional causes, others to wholly local influences, but a careful analysis will show that they are due to both. But," he says, "we cannot call eczema a local manifestation of a constitutional disease, as is the case with syphilis." He holds, following his father, no doubt, that the far greater number of these eruptions are due to external influences—thus being "artificial." Bulkley says of eczema: "It is eminently a disease of debility; this may be of three kinds—assimilative, nutritive or nervous, or, as more commonly spoken of, gouty, strumous or neurotic." He thinks that the majority show the "gouty" state. I remember one of his habitual prescriptions at the New York Skin and Cancer Hospital. It contained tincture of nux vomica, "Fowler's Solution," acetate of potash and water at least, and was given to the majority of his eczema patients, with occasional variations. His remarks upon general etiology are worth reproducing:

"Failure in the action of the kidneys, bowels, lungs and liver deranges the balance of the system, and may result in disease of any organ which has work thrown upon it which it cannot perform." "We must believe, therefore," he says, "that the skin undoubtedly may become diseased in the effort to produce its secretions from imperfectly elaborated blood as well as to take its nourishment from that which has been insufficiently prepared for it in other portions of the economy."

Robinson says: "We do not believe that at any time such conditions as scrofula, anæmia, chlorosis, etc., produce eczema, except in an indirect way by increasing the irritability of the elements of the skin, or lessening their power to withstand direct irritation either from within or without, and we are obliged to hold eczema of local origin." What Fox says of eczema applies to other skin eruptions, viz.: "Its association with various maladies may suggest a relationship." Here are a few of the "predisposing" causes of eczema as enumerated by Veiel in Ziemssen's Handbook of Skin Diseases, which if we admit their correctness disproves the theory of a specific blood condition as the source of the disease—viz., chlorosis, rachitis, scrofula, gout, albuminuria, diabetes, gastric and intestinal catarrhs, dysmenorrhœa, uterine affections, lactation, pregnancy—and if he has omitted any we must believè it was unintentional. We may find one or more of these conditions accompanying various skin diseases, and the whole matter could have been as fully expressed by saying, "Any condition of health which tends to lower the vital forces and reduce the powers of resistance of the skin may act as a predisposing element." Eichhorst says, in Wood's Library, in speaking of causes of eczema, "There is danger of mistaking an accidental complication for an etiological factor." Elliot speaks of the "indefinite and deplorably termed condition 'impurity of the blood'" in his article on the treatment of eczema.—*Med. and Surg. Jour.*, 1890.

Piffard believes that fully one-third of all skin diseases originate from a *materies morbi* generated in the body from digestive, assimilative or excretory function. He enlarges upon the subject when he expresses the opinion that "eczema is produced by material formed in the blood from imperfect oxidation; the cause of the latter being the failure of the liver to perform its full duty as an oxidizing agent." Of course he does not mean all eczemas, but the above sentence should bring comfort both to those who cheerish the blood theory and those who are accustomed to often find the "liver out of order." Piffard's views are not accepted by dermatologists in general. He further thinks that the most peccant matters in eczema are uric and oxalic acids. Taylor says that "the attempt to prove that a number of distinct morbid conditions or diatheses is at the root of eczema and allied skin diseases has resulted in failure." Robinson says that "dentition is no more the cause of skin disease than of other troubles innocently charged to it." We usually find that annoying and incurable disease psoriasis in robust subjects, but the recurrence may be produced by temporary lowering of the health. Certain skin affections, as pruritus and eczema, are quite common in old persons, probably the result of senile changes. It is well known that vaccination sometimes sets up a skin disease, as eczema, impetigo contagiosa. Varicose veins of the leg may cause ulceration, or eczema. That unpleasant condition known as dermatalgia is considered by most authorities to be closely related to rheumatism. Pruritus has been attributed to the uric acid diathesis, diabetes mellitus and jaundice. Boils are often considered evidence of good health, whereas the reverse is true. They, as well as carbuncles, abscess and gangrene, have frequently been associated with diabetes mellitus, but are beginning to be considered the result of infection (pus cocci.)

Purpura rheumatica (a rare disease) gets its descriptive adjective from the belief that it is closely related to rheumatism. Lupus vulgaris is considered a tuberculosis of the skin, and is the disease in which so much was claimed for Koch's lymph. "Shingles" (herpes foster) has been found, in many cases, due to peripheral or central injury to the sensory nerves. Then we read that certain changes in the pigmentation of the skin are due to "nervous influence;" likewise local sweating (probably) and attacks of urticaria. Hebra, Jr., has a description of a number of "trophoneuroses," but they are not generally accepted. He also had a case resembling purpura hemorrhagica, the result of phosphorus poisoning.

From my own notes of about three hundred cases I eliminate about sixty as not properly coming under consideration, belonging to one or other of the classes mentioned at the beginning of this paper. Of the remainder, I find about eighty-seven had some general disorder, and about a dozen with only chronic constipation. The age ranged from two months to eighty-five years. The skin diseases among the number were those most commonly met with in practice. Chronic urticaria alone (three cases) seemed always accompanied by the rheumatic diathesis. The most common deviation from health was some form of dyspepsia in adults, struma and bowel trouble in children, occasional excess of uric acid in the urine of either. Children whose nutrition was low, owing to artificial feeding, were generally troublesome cases to treat. The urine of patients was not regularly examined unless it seemed necessary, because I tested and examined the urine of every patient who came into the

New York Skin and Cancer Hospital until I got tired of negative results —save occasional uric acid, oxalate of lime or phosphates in excess—and became convinced that nothing abnormal would be found in the urine of the average skin patient. I have seen a patient with eczema get a severe relapse after taking a few bottles of beer, and I have had cases of women which were somewhat aggravated at the periods. But it would be a useless waste of time to read the details of my cases. It is sufficient to say that there were at least one-third of the true eruptive cases in which it was impossible to ascertain any deviation from health, and it is also true that the majority of those cases in which there was a deviation from health showed no positive evidence of a direct connection between the skin trouble and the internal disease.

The diagnosis of a skin disease is as important as the diagnosis of any other disease, for the treatment of the different diseases differs markedly. The prognosis depends upon the correct treatment, the faithful following of directions by the patient and our ability to restore the vital functions to a condition rendering it possible for the skin to receive its proper nutriment or its proper nervous influence. The " soundest general practitioner," if he can employ the proper local treatment also, is the most likely to get good results in the treatment of skin diseases; but do not give internal treatment unless especially indicated! You must select your cases in giving arsenic. You will find some other diseases besides syphilis which may sometimes be favorably influenced by iodide of potassium, perhaps through its diuretic action. There is a common belief that it is dangerous to cure certain skin diseases lest you " drive it back in the blood," as a patient told me. This is related to the idea that *fistula in ano* should not be cured lest the patient develop consumption; a belief which no longer universally exists.

Duhring says it should always be the aim of the physician to cure a skin disease as rapidly and effectively as possible; that we need entertain no fear of " curing too soon " nor of " driving in the eruption," but the danger is rather in temporizing with the disease.

Crocker says: " The popular idea that it is dangerous to cure eruptions quickly, or, as the laity put it, ' drive the rash in ' is as erroneous as the notion that nearly all skin diseases are due to ' impurities in the blood.' " Taylor mentions the absurdity of the idea of " danger in curing up." He also says internal medicine is not needed in a large proportion of cases of eczema—as they will often yield to local measures alone. This has been my experience with the majority of skin diseases.

Simon says, " Hebra was no doubt right when he said there was no specific, constitutional treatment for skin diseases." Crocker says: " Probably of all conditions requiring attention, dyspepsia and other disorders of the alimentary canal are the most important." Elliot says: "There are no specifics for eczema, no drugs which influence the process directly, and in virtue of their peculiar properties and action, but the benefit which is obtained from the use of any medicinal agent internally is through its power or capability of removing or improving those functional or other disturbances of health which brought about a predisposing and favorable condition for the development of the disease. The whole matter of treatment can be expressed in a few words: Treat the general condition just as if there were no skin disease present, and the skin disease with appropriate local application.

To sum up now: I have written mostly of eczema because it is the best known and most common skin disease—comprising about one-third of all. You find nearly every type of skin disease in one or other form of eczema; and what applies, in general, to eczema applies to all the others.

Two things are evident after reading the opinions of the various writers upon skin diseases: First, we can be positive that skin diseases are not all "blood diseases," or the idea would have been universally accepted. In the second place, the unanimity of authorities in attributing various of these diseases indefinitely to some "nervous influence," and their disagreement in many details, show that there is yet much to be learned concerning the actual etiology of skin diseases. The "germ theory" has received scant attention in this paper, because the discoveries of skin disease producing "germs" are yet in such a decided condition of infancy that a discussion thereupon would lead us further into the dark than the necessities of the case demand.

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ARTICLE II.

THE VENOMOUS REPTILES OF THE UNITED STATES, WITH THE TREATMENT OF WOUNDS INFLICTED BY THEM.[1]

By Paul B. Barringer, M.D., University of Virginia.

The more perfect the conception of a mechanism which inflicts an injury, and the more perfect the comprehension of the physiological and pathological changes which ensue as the result of such an injury, the more perfectly will the knowing surgeon be enabled to treat it. From my belief in the above statement, I have decided to lay before a body of surgeons a paper which possibly has equal claim upon the attention of naturalists.

American snakes are divided by herpetologists into three great families—the *Colubrinæ*, the *Elapidæ*, and the *Crotalidæ*. The Colubrine snakes will not number, under a strict classification, more than some sixty-five or seventy species, and they include about nine-tenths of all American snakes. Moreover, this large family is composed entirely of harmless snakes—that is, of snakes without fangs or poison sacs, and whose bite is no more injurious than the scratch of a briar. As this class includes some, however, which are popularly supposed to be very deadly, I will allude to them, though they fall without the limits of this paper. I do this from the fact that I have recently learned from reliable sources of a death from an overdose of whiskey, administered for the bite of a harmless snake. The *Heterodon* family, the so-called "Spreading Adders," are, by the great mass of the people, believed to be next in venomous power to the rattlesnake itself. They are perfectly harmless, and their evil name comes entirely from the fact that in coloring, form, and even in action, they mimic the venomous types. The spotted spreading adder (*H. platyrhinus*), often called the "Blow Snake," from the manner in which it distends its body with air and emits it through the throat with a rushing sound, is found both North and South in the Eastern United States, and is greatly feared, though perfectly harmless. The "Black Adder" (*H. niger*) is limited to the South, and is the special horror of the uninformed. The smaller form (*H. simus*) is killed as a "young rattlesnake."

The *Tropidonotus* family furnishes two members that are popularly considered very deadly. The "Water Snake" (*T. sipedon*) furnishes the foundation of many blood-curdling stories in the North, while the reputation of his Southern brother (*T. fasciatus*) imparts a flavor to "snake medicine" not otherwise obtained. These are both confounded with the true water moccasin, and suffer by the confusion. As it becomes a matter of some moment in the South, where all three are found, to distinguish them from the truly venomous moccasin, I will give the method further on. Though bold and blustering, and striking viciously when approached, these have no fangs or venom. I might mention others which, in certain localities, are feared without cause, but the misrepresentation of the above is universal.

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[1] Read before the Southern Surgical and Gynecological Association, Richmond, Va., Nov., 1891.

Turning to the next family—the *Elapidæ*—we find family and genus represented by a single species, of many varieties. This snake (*Elaps fulvius*) is, however, of especial interest to us, as it is a venomous serpent, though presenting the general character of a harmless one. This small and beautiful serpent is the sole American representative of the dreaded *Cobra* family of India and Africa. First described by Audubon (and drawn by him in one of his ornithological plates) as the Harlequin snake, Holbrook, in 1842, pointed out the fact that it had venom fangs. Under the names of Harlequin snake, Bead snake, and Coral snake, this beautiful little reptile has often been described, but seldom in its true light. Shy in its habits, and hence not often seen, it is not considered common anywhere, and yet it extends from Virginia to Texas. Gentle of disposition, and never aggressive, it often will not bite when handled, and seems too small and beautiful to be harmful. Dr. S. Weir Mitchell, of Philadelphia, in a most interesting and complete article on the "Poison of Serpents," in the *Century Magazine* of August, 1889, says of this snake that it is "too small with us to be dangerous to man." It is to prevent you from falling into a similar error that I report the following case:

A workman was bitten on the hand by a small snake while playing with it. He killed the snake, and thought little of it. For a while no pain or general effect followed. In less than half an hour, however, pain in the arm and some evidence of loss of muscular power came on, and, in spite of the aid of a physician called in, at the end of eighteen hours he died. An examination of the snake showed it to be "small, and its body was encircled by bright-colored bands. An examination of its mouth showed two fangs in the upper jaw." Mr. Charles E. Coe reports this in the *Scientific American* of June 27, 1891, and refers to Dr. Mitchell's error. He also refers to other cases that seem to have come under his knowledge where a fatal result followed the bite of this snake.

In various parts of the South, from Virginia to Texas, you will hear tales of a beautifully colored snake whose bite is deadly. These tales are too uniform in their coloring to be ignored. But having no accurate description to go upon, and knowing that most of these gorgeously colored snakes are not poisonous, mistakes are liable to occur. I will therefore give you a description that will, I think, enable you at all times to recognize it. It is small, from sixteen to twenty inches long. The neck is full, making the head seem small and hardly separated from the body. The general body-ground is a blue-black, marked as follows: Behind the head, and extending forward under the throat, is a yellow band. Behind this, on the body, are a dozen or more wide brick-red bands, extending to the belly, and each red band is bordered by a narrow band of yellow before and behind. The tail is barred with yellow, and tipped with the same. The ventral plates behind the anus are all *divided*, the only poisonous snake in America in which this is true. The geographical range of this snake is from Southern Virginia around the South Atlantic States to the Gulf; up the Mississippi Valley to Missouri, and thence to Texas. Common nowhere, it is most abundant in Florida, and there seems to attain a greater size than elsewhere. Specific names have been given to several of its varieties, but it is doubtful if they will hold.

The remaining family—the *Crotalidæ*—includes all the other venomous snakes in the United States. Not only is this the larger number, but they are snakes that are limited to this hemisphere. While the Crotaline snakes may be classed with the vipers of the old world, they present some characters so peculiar and constant as to entitle them to a special division. One of these is a deep pit between the eye and nostril, and below a line joining these, and hence they receive the name of "pit vipers." This family includes our rattlesnake tribe, with its various subdivisions, and also the copperhead and water moccasin.

The rattlesnakes are divided into two genera by structural peculiarities that any observer would notice, and as it is a distinction of some practical bearing, I will ask your attention. The rattlesnakes that inhabited the open prairies of the Northwest, and to which the Indians applied the name "Massasauga" (*Sisturus catenatus*), and the "Ground rattlesnake" of the South (*Sisturus miliaris*), have the top of the head as far back as the eyes covered with large scales. The Diamond rattlesnake of the South (*Crotalus adamanteus*), and his more Northern brother the common rattlesnake (*C. horridus*), have the head covered with small scales almost up to the nose, the eyes only being covered each by a large plate. For reasons that are not altogether understood, the latter genus is the more to be feared as a poisoner. The ground rattlesnakes of the South do not attain a size sufficient to make them greatly feared, but their Western relatives often reach five feet in length, and yet their bites do not produce so disastrous results as the bite of a common rattler or a diamond rattlesnake of the same size. In size the common rattlesnake seldom exceeds four feet, while the diamond rattlesnake of Florida and of Texas will sometimes nearly double this. Without going further into the different varieties of rattlesnakes—some fourteen or more—we may say that they all have rattles, and beyond the fact that the genus *Sisturus* does not seem, weight for weight, as poisonous as the genus *Crotalus*, they are poisonous in proportion to their size. The American copperhead is, perhaps, the most widespread of any single species of American venomous serpent; and while the opinion is not warranted by the facts, I know of no locality in which the rattlesnake and the copperhead are found side by side in which the inhabitants do not fear the latter the more. In truth, the rattlesnake, drop for drop of venom, is the more poisonous, but his life habits are such as to make bites from him quite rare, while with the copperhead they are common. This arises from the difference in temperament, if I may so speak, in the two snakes. Observe them in captivity, and you will at once see this difference. The rattlesnake is sluggish and slow in movement. It is boldly indifferent to approach, and half the time will not take the trouble to coil when approached. At rest it lies with the head drawn down on the coil, and will seldom attempt to strike except from a coil. How different with the copperhead! Ever on the *qui vive*, he coils when he hears you coming. Whether fresh or tired, he will not put his head down but will keep his head well up, ever on the alert. As his classical name signifies (*Agkistrodon contortrix*), he is a snake of action. He can strike under conditions where a rattlesnake would be helpless. Some of the feats that I have seen this serpent perform in this line seem incredible. I have seen him strike the sole of the foot through an opening in the floor not appreciably larger than the snake's head. This summer I knew a child bitten by a horizontal blow from under a warped plank on a barn floor. It is the vicious nature and extreme agility of this pest rather than its real poisoning power that makes it so much to be feared. As before stated, it is very widespread. Under the names of Copperhead, Highland Moccasin, Cotton-mouth and Pilot, its different varieties are found throughout the United States, east of the Rocky Mountains. In the mountain regions of southern Virginia, North Carolina and Tennessee we have a variety (the *atrofuscus* of Troost) which, perhaps, is a different species, but certainly presents no generic difference. In simple coloring, snakes vary greatly with the locality, conforming as they do to their environment. Leaving the copperheads, we come to another branch of the same genus—the Water Moccasin (*Agkistrodon piscivorus*).

South of a line drawn from Norfolk to about Cairo, Illinois, this reptile abounds. Not having the predilection for barns, corn cribs and gardens that its kinsman, the copperhead, seems to possess, but seeking the meadows and swamps near water, it is not so much to be feared, but it is of about the same poisoning power. Mitchell puts it at slightly less, but from cases that I have seen, I think that the average bite of this reptile is about equal in severity to that of the copperhead. Its short, compact body makes it seem much smaller than it really is; the average specimen will be heavier than the average copperhead. It is this malicious reptile that has given the widespread fear of water snakes throughout the Union, but this fear is without foundation at the North. This rough slime-befouled snake is, as its name implies, a fish eater. From sheer malice it will kill fish too large for it to swallow, and this malicious spirit is shown toward other snakes. If a colubrine snake is placed in a cage with a rattlesnake, it will be treated with contempt; but if caged with a water moccasin it will be killed.

This is the complete list of all the poisonous snakes of the United States. While it is not within the province of this paper to give any detailed account of the structural characteristics by which each may be told, I will give a key that will enable any one to tell a poisonous snake when killed. Leaving out of consideration the black, red and yellow Elaps above described, any American snake with the pit between the eye and nostril is a venomous snake, and this is absolutely certain if, in addition to this, you find one or more ventral plates behind the anus *undivided*. Of the secondary characters that distinguish our venomous snakes may be mentioned the following: An elliptical pupil placed vertically, a triangular head, narrow neck, and a blunt tail (rattle or no rattle). Living young within the gullet, or eggs in advanced stages of incubation in the ovisac, are likewise distinguishing features, as all our crotaline snakes are oviparous.

Leaving the snakes, we come to an American lizard that, in spite of some protests to the contrary, takes its place among the venomous reptiles of the United States. I allude to the Gila Monster of Arizona and New Mexico. This hideous reptile, in its tough armor of orange and black, has been the subject of no little controversy among medical writers. With the Apache Indians, Mitchell and Reichert on one side, and Yarrow and others on the other, the war still goes on. But one fact remains: that men have died from the effects of the bite of this lacertilian. I am able to add other cases to those previously reported. Dr. Charles C. Barrows, of New York, late of the United States Army, in reply to a letter of inquiry on this subject, writes me as follows:

"I have known of two deaths from this cause (Gila Monster). In each case the man bitten was drunk, and the circumstances surrounding the cases were almost identical. In one case a crowd had tormented and worried the monster until he was in a violent rage. A man picked the animal up, and was bitten deeply in the forearm. He had all the symptoms of cardiac depression, and although he was freely plied with stimulants, within a few hours he was dead.

"The other case occurred near Tombstone, and except that the man was bitten on the thumb, was similar in detail and ending."

Similar deaths have been ascribed by the non-venomous side of the controversy to "a mixture of disease, Gila Monster, and bad whiskey," but the facts of the case remain.

Let us now turn from the reptiles themselves, and take up the mechanism by which they administer the venom to the object of their wrath.

The little Elaps, the first considered, has in common with all the Cobra family, to which it belongs, on either side of the upper jaw a single permanently erect and immovable fang. This is pierced by a venom-duct, opening near the point, and communicating with a comparatively large venom-gland behind the eye, and running down into the neck. The set of the teeth is such that if they catch they will hang—*i.e.*, they will pull upon the tissues, and drag in more deeply. As in other snakes, the forcible closing of the mouth upon the part bitten compresses the so-called venom-sac, and forces out the fluid.

In the *Crotalidæ*, by far the greater number of our venomous snakes, we have an entirely different and more complicated mechanism. In these, as in all the vipers, with one exception, we have the fangs large and movable, lying folded back when at rest, and capable of being erected and brought forward when striking. This act is performed by the rotation of the superior maxillary bone, in which they are firmly fixed, on a process of the lachrymal. This is partly a muscular and partly a bony lever movement. The fangs are relatively large, and not regularly curved, but consist of two segments of an arc of given radius, joined at an obtuse angle. For this reason the tooth is seldom or never sent to the hilt, so to speak, but seems best suited for tearing or ploughing the tissues. The tooth of a serpent is formed of a flattened plate folded to form a tube, and the opening at its end, where not joined, is the exit of the venom-duct. In the snakes under consideration, the opening, contrary to the general belief, is in the *convex* side of the tooth. If we accept the fact that it is a cutting hook, and not a stabbing tool, the opening is placed just right. The tissues are uninjured on the concave side where the tooth hangs, but are more or less torn on the convex side. About the same mechanism is used to propel the venom from the sac as in the preceding. One of the temporals, and the spheno-pterygoid muscle, so-called, make pressure upon the sac, and squeeze out its contents the instant the fang is engaged. In some snakes, the copperhead especially, even if the fang fails to engage, the venom is squeezed out and thrown quite a distance. The venom-gland in the *Crotalidæ* is placed below and behind the eye. It is of the compound sacculated type, and from each of its many lobules the ducts run downward and forward to join a large duct somewhat expanded—the so-called venom-sac. Where this duct or sac joins the tooth at its ampulla-like base the duct is very small, and it is claimed by some to have a sphincter, which I have never been able to distinguish. The true method of closure here lies in the fact that, while the tooth is folded back, this constricted portion is drawn tight over the base of the tooth, and when the fang is erected it is relaxed. The mechanism is the same in all the rattlesnakes, copperheads and moccasins.

Turning to the venom apparatus of the Gila Monster, we find a mechanism differing greatly from either of the above. The venom fangs, if the lizard's twelve or more lower teeth may be so called, are sharp and nearly straight. A recent writer on this subject describes the venom-sacs as located at the base of each tooth, and intimates that the grooves found in the teeth carry their venom into the depths of the wound. This does not agree with my own dissections in the least. In all animals (five) dissected by me, I find the following:

There are eight, or, at most, nine curved teeth in each side of the lower jaw, ossified to its upper surface, lacertilian-fashion, and not implanted in its substance. These teeth present a groove from base to apex as the result simply of their being made of a flat plate folded on itself, shell-fashion. The only "venom-gland" that I could ever find is an enormously developed salivary gland of the serous type, lying *external* to the body of the inferior maxilla, and extending from the symphysis backward and downward. I should call this gland a sub-mental gland. Just external to the line of the inferior teeth is a very marked and deep fold of mucous membrane, a peculiar and pronounced trough-like cavity, and into the bottom of this, *between each of the teeth*, the ducts from the gland before mentioned open by large distinct openings. While the teeth are very similar, this condition does not obtain in the upper jaw. This animal cannot bite, therefore, unless the object seized can be gotten within the mouth. When it does seize, it holds on, shaking the object held as if to sink its fangs deeper and work the saliva-like fluid into the wound. You can readily see how this trough-like cavity, as it is pressed upon by the mucous membrane of the gum being pressed down, will readily discharge its contents into the openings made by the teeth. The owner of this queer device is sluggish and peaceful, and only when he is tormented and worried can he be made to bite.

Let us now consider the venom of these pests. While to L. Bonaparte and others great credit is due for pioneer work in this field, it is to Dr. Weir Mitchell and his colleague in labor, Dr. Reichart, that we owe a debt of gratitude for what is really known on this subject. Through them we learn concerning serpent venom that is a complex proteid compound, having two distinct factors, which differ one from the other markedly.

The first of these is *venom peptone*. It is, as its name implies, a highly diffusible, modified albumen that is very rapid in its penetration of the tissues when injected subcutaneously, or even when swallowed. Its physiological action is as follows: Injected into the tissues, as a crystalloidal body, it passes with ease into the blood and lymph currents. Its first effects is to depress the heart's action, and in large enough dose will stop it at once in diastole. This effect is usually slight, however, from American serpents, but not invariably. It produces but little of the marked local effect seen when the other type of venom proteid is injected. After quite a period some swelling is seen, but at no time is it marked. In the mean time it is beginning to show its selective properties upon the nervous system, and an acute ascending paralysis of the cord results.[1] Death by asphyxia ensues when the respiratory center is reached. Foektistow shows that the cardiac depression is due, not to the influence on the heart muscle, but to disturbance of function in the ganglia of cardiac control, both extrinsic and intrinsic. The same writer shows that strychnia convulsions are checked at once by snake venom but I regret to say that this was not demonstrated of venom peptone alone, though it was, from what we know of the other constituent, doubtless the agent. As regards its influence on the blood, Kinyoun shows that Cobra venom, which is nearly all venom peptone, has no decided influences in modifying the coagulability of the blood.

The other potent factor of serpent venom is *venom globulin*. This class of proteids—the globulins—as you know, are all soluble in dilute saline solutions while precipitated by saturated saline solutions. In accordance with the theory of Schmidt, this globulin class includes two out of the three (fibrin) factors concerned in the coagulation of blood. Looking, then, at the ease with which these globulins take upon themselves a change of form, and the close relationship that venom globulin bears chemically to the usual clot constituents of blood, we cannot be surprised if we learn that the first marked action of venom globulin is the production of a change in the coagulating power of the blood.

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[1] Marine-Hospital Reports, 1890.

While it has not the power of passing through animal membranes that venom peptone has, and hence may be swallowed with impunity, it seems to have the power of dissolving animal membranes, so quickly does the blood rush out of its vessels. This causes a swelling of the soft parts so quickly that I have known a boy's foot to be markedly swollen by the time he ran two hundred yards. While this pronounced local effect is taking place, the same series of changes are taking place throughout the body, and if the quantity of venom injected be great enough and life be prolonged, we have bloody extravasations on every mucous and serous surface in the body. But venom globulin is a nerve poison as well as a local one. *Pari passu* with the changes aforesaid, we have a gradual but not so pronounced paralysis of the nerve centers of the cord from below upward, and if the amount be great enough, ultimately death from asphyxia. The temporary heart disturbance found in poisoning from venom peptone is found here also, and in about the same degree. But the most pronounced change in the circulation is noted in the immense and rapid fall in blood-pressure. Foektistow found this to be due, not so much to the extravasations before mentioned as to a vasomotor paralysis of the splanchnic area, and a resulting drainage of the general blood of the body into this area. Injections of defibrinated blood into the bitten animal raises the pressure only while it lasts, even when injected in great amount.

Applying this knowledge to our American snakes, we find the following:

The venom of the Harlequin snake (*Elaps fulvius*) has never been subjected to examination, as far as I can learn, and we must therefore judge by analogy. As the Elaps belongs to the Cobra family, Cobra venom may safely be taken to represent it. This venom, nearly all peptone, and only 1.75 per cent. globulin, would give us little local action and pronounced paralytic result. I have looked up the careful estimates of amounts likely to prove fatal, and find that for fresh Cobra venom, 0.00008 of a gramme per kilo is a fatal dose (Vincent Richards), while of dried Cobra venom about 0.002 of gramme per kilo was necessary (Kinyoun). For fresh venom this is about $\frac{1}{1500}$ of a grain per pound of weight. With these figures, the Elaps seems quite a large snake.

Turning next to our Rattlesnakes, we find a very different story. The venom of the Diamond rattlesnake, probably our worst, contains 24.6 per cent. venom-globulin (Mitchell), and but little venom peptone. Hence, we would have pronounced local effect and a much more uncertain and slow paralytic result. As to the amount of venom that a rattlesnake contains for a given size, so much depends upon the time which has elapsed since he last struck that any series of observations, to be of any value, must extend over quite a time, and be made upon a large number of animals. I am at work upon such a table now, but for so short a time, that any result given would be little short of guesswork. I do not think, however, that it will be found ultimately to be far from one gramme of venom per kilo of snake. From a number of measurements, I find that a snake will have to be nearly four feet long to weigh a kilo. Such a snake would, therefore, give about 15 minims of venom as his average. Taking Fontana's estimate of $\frac{1}{60}$ of a grain per pound of weight as the fatal dose, we find that 3 minims absorbed would produce death in a one-hundred-and-eighty-pound man. It should be stated, however, that in estimating this amount per snake we took in every case all that could be obtained, urging the most persistent biting on his part at the cup. No snake of four feet in length can deliver anything like 15 minims in a wound at one blow.

Turning from the rattlesnakes to the other Crotalines, we find that the copperhead gives of venom globulin about 8 per cent. and the water moccasin a little less, while their venom peptone is little.

In their *Smithsonian Report* of serpent venom, Drs. Mitchell and Reichert state that they found bacteria of various kinds in venom, and that they were harmless. I can readily conceive that a diseased snake might have bacteria in its venom sac, but that they exist in the venom of the average snake I am convinced is an error. In conjunction with my colleague, Prof. Tuttle, of the University of Virginia, I tested the venom of various snakes, and in no instance did I find bacteria if taken from a sterilized fang. The procedure was as follows: The snake was caught with the staff, the mouth drawn open, and the upper jaw held up by a piece of cloth in the mouth through which the fangs projected. Over the fangs were slipped layer after layer of antiseptic filter-paper until only the tip was exposed. By pressing the side of the head a few drops of venom were expressed, and this was allowed to run, to clean the duct. After this, no venom removed through the fang (from a healthy snake) ever gave a single colony, though tested in media of various kinds. While on the subject of healthy snakes, I may mention a discovery that we did make during these examinations. In expressing the venom of a big "four-foot" rattlesnake (*C. horridus*), we noticed a white, flaky material coming out from one of the fangs, and upon microscopical examination found in the venom a living colony of nematode worms. These worms lived in a small vial of mixed venom from various snakes until it decomposed—about two weeks.[1]

I must therefore conclude that the bacteria at various times reported in venom came from the serpent's mouth, and that these mouth-bacteria are harmless is more than doubtful. If any one will examine any series of reports on bites of American snakes, he cannot fail to be struck with the fact that about one case in every five is complicated with symptoms of septicæmia. This is especially true of Yarrow's series of cases in the *American Journal of the Medical Sciences*, April, 1884. That the bacteria of infection do not reside in the venom I feel assured. That they come from the snake's mouth and that they are often pyogenetic, I am absolutely certain from repeated experiments in which the bite of a non-venomous snake (Hetereodon) was followed by pus formation too frequently to be merely accidental. This should cause us to modify our treatment of snake-bites—at least, enough to bring them within the pale of modern surgery. The results of Kinyoun's experiments with Cobra venom as a germicide are strongly corroborative of the views here put forth. Not only are pyogenetic bacteria not found in venom, but a 1 per cent. solution of Cobra venom produces a decided inhibition to the growth of many bacteria, including streptococcus pyogenes and staphylococcus pyogenes aureus.[1]

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[1] The species to which this worm belongs was not determined, and probably has never been described. It is possibly a member of the Strongylus family.

Leaving the snakes' venom, and turning to the Gila Monster, we find that we know far less about it. That it is a modified saliva is certain, and that it comes from their sub-mental gland I also feel assured. It would seem from the divergence in the results obtained by Yarrow and Mitchell, both careful observers, that it differs in toxic power under different conditions of body. To those familiar with the immense variation in the saliva of other animals when produced under varying stimulation of the secretory nerves, it would not seem too much to look for some such change here. The peculiar odor of the saliva found in these animals is most marked when the animal is enraged. Moreover, I have known of no case in which a serious result followed its bite in which the animal was not in a fury of rage.

The diagnosis of a snake bite is usually easy with American snakes, as all except the Elaps produce marked local swelling and extravasations. But if it were an Elaps, the absence of local lesion, the decided mental hebetude, almost coma, dilated pupil, and general paralytic condition might, especially if the smell of whiskey be upon the breath, mislead with serious results.

The wound made by a non-venomous snake is usually different from that made by a poisonous one. In the former, a series of small punctures in a double line show the point struck, while in the latter, if there be more than two, the others are comparatively insignificant.

While in certain countries, as in India, death from snake bite runs up into the thousands per annum, the returns of death from this cause in the United States amount to almost nothing. And yet every practitioner in the country districts meets cases almost yearly. These two facts together give us as favorable the general prognosis in the wounds inflicted by our reptiles. Taking them in detail, I can give no statistics for the Elaps, but as it is not a common snake, and of gentle disposition, its bites must be comparatively few. From a series of thirty-eight rattlesnake bites that I have gotten, I think that taking man, woman and child, the mortality will not run over 10 per cent. This is meant to cover the region inhabited by the huge Diamond rattlesnakes, as well as the less dangerous *Systurus.* As regards the copperhead's bite, I have (including Yarrow's nine cases) sixty-nine cases, with one death. This was a boy six years of age, and it took place after several days. All in all, I do not believe the mortality from the copperhead's bite will run over 1 per cent., taking man, woman and child bitten. The water moccasin being, from its peculiar habitat, less apt to bite children, will fall below this. In fact, I have never been able to learn of an authentic case of death from the moccasin's bite.

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[1] American Marine Hospital Reports, 1890.

Treatment of Reptile Bites.—In the first place, the preventive treatment lies in keeping out of the region inhabited by these pests, or, if you must expose yourself, wearing good protective leggings, etc. The hog is, of all creatures known, the greatest practical enemy of the snake. In some swamp and mountain districts of the country the abundance of the bears prevents the raising of hogs, and here the snakes abound, the bear being the unintentional protector of the snake.

Leaving preventive treatment out of consideration, we may divide the immediate into two heads:

First, the local treatment. Every individual whose occupation exposes him to the danger of such wounds should know that immediate attention to such wounds will save his life in almost any contingency. With a knife, or even with a thorn, cut or tear open the wound until it bleeds freely. As almost all bites are on the extremities, the patient may be able to suck the wound. If so, do it at once—a sore mouth or decayed tooth makes no difference; the very act of suction will prevent the entrance of the poison into a mouth lesion. If the surgeon is at hand, which seldom happens when the bite first occurs, he should open each of the punctures transversely to the line of lymph and blood flow, and apply a cupping glass. If at hand, a solution of permanganate of potash (10 per cent.) or a strong solution of liquor potassæ, injected into the wound, will destroy the physiological activity of the venom entirely. If he can do two things at the same time, let him likewise tie an extemporized tourniquet around the limb at once. The above treatment is entirely independent of the kind of snake, provided only it be poisonous. Now let me say one word more in regard to the local treatment. In five per cent. of all bites that are recovered from a chronic septicæmia results. This is due to the fact that almost all snake wounds are more or less infected with pyogenetic bacteria from the saliva of the snake. The viscid mucus always in a serpent's mouth to enable it to swallow its prey is a perfect nidus for the propagation of these germs. The abundance of this mucus gives to our copperhead in many localities the term cotton-mouth, and it is from them especially that we receive these septic bites. In viewing the local effects of venom globulin, in which our snakes abound, we saw a condition produced most favorably to the spread of pyogenic and saprophytic bacteria, and they very readily take hold here. Therefore all snake wounds should have applied to them the same surgical care applied in these days to other wounds. This chronic septicæmia seems to produce a recurrent neuritis in the nerves distributed to the part bitten, and often when similar telluric conditions again obtain, we are apt to have herpetic eruptions break out at the seat of the wound.

Turning to the constitutional treatment, we find that alcohol in moderate quantities (not over a half pint all told) is an agent usually sufficient to maintain the heart's action and blood pressure at a safe point. But as the poison begins to make itself more distinctly felt on the centers, we find that alcohol, especially if the amount of venom be great, is unable to prevent a dangerous fall in the force of nerve impulses sent out, and we must assist it by strychnia. One-thirtieth to one-twentieth of a grain hypodermatically administered will increase the nerve-center tone, and restore the waning powers. To avoid gangrene of the limb, as the result of our tourniquet, it will be necessary at intervals to remove it, and at these times more or less venom will enter the system. By repeating the alcohol, strychnia, and in case of a Gila Monster bite, digitalis, we may tide over these periods, and save a patient under conditions most adverse. The above include all remedies of demonstrated power. Bibron's antidote, the Tanjore pill, viola sagittata, squirrel's ear, sweet oil and many other remedies, each have their advocates, but I know nothing of them. The means that I have suggested have in very many cases saved human life, but they should be in the hands of a man who will not lose his head from excitement.

ARTICLE III.

URINALYSIS—ITS SIGNIFICANCE IN LIFE INSURANCE.

By Marvin L. Graves, A.M., M.D.

The significance of Urinalysis in Life Insurance differs but little, if at all, from its significance and importance in the general practice of medicine. True it is, only limited and imperfect examinations are made in the large majority of cases of both, yet this subject is of growing interest and demands our attention. Prefacing, then, with the statement that accurate, detailed examination of the urine is a means rather than an end in scientific investigation, we may divide the subject into the following heads:

1st. Normal urine; its characters and constituents; the mechanism of its secretion; its relation to health.

2d. Indications of various abnormal or pathological conditions and their significance to (a) the doctor, (b) the Life Insurance Company, (c) the applicant. These subdivisions embrace, also, (a) diagnosis, (b) prognosis, (c) treatment incidentally.

1st. The urine and the urinary organs constitute the most important of the four systems of sewage or drainage in the human economy. The skin will bear immense destruction of its secreting surface and yet not destroy life. The function of the bowel, so far as elimination is concerned, constantly exhibits meekness and long suffering. While it is true that the urinary organs, when seriously impaired by structural lesions, may go on for years performing their office, yet there is no single moment of absolute safety, and a little indiscretion may light up fatal trouble.

Urine is the essential, typical excrementitious fluid of the body. It is not a secretion, but consists of the products of disassimilation or wear and tear of the tissues held in suspension in water. Even this water is said to be excrementitious by Flint. The urine, then, is not secreted but excreted or eliminated by the kidneys as sweat is eliminated by the skin, or carbon dioxide by the lungs, or cholesterin by the liver, or fæces by the rectum. It has no office to perform in the body, and is simply gathered up by the scavenger blood from the various organs and tissues and carried to the kidneys as a door of exit. If not eliminated either from mechanical, chemical, physical, medicinal, or pathological conditions of the urinary organs, its constituents accumulate in the body, produce toxæmia and become grave sources of danger, although other organs assume a vicarious action. The characteristic constituents of the urine preëxist in the blood. The tubules simply filter the blood free from these effete matters and discharge transuded water enough to wash them out.

Albumen and its congeners—that is organic, nitrogenized, noncrystallizable substances never exist normally in the urine, or other excrementitious fluids, as sweat or axillary gland secretion. Neither do the organic non-nitrogenized elements as sugars or fats occur except in pathological conditions. It is well to remember just here some of the anatomy of the kidney, and the theory first advanced by Bowman and confirmed by Heidenhain, that the solid constituents, as urea, urates, creatine, etc., are separated from the blood by the epithelium of the convoluted tubes mainly, with some assistance by the loops of Heule, and that the watery and inorganic elements transude into the malpighian bodies and thence flow down upon and wash out the others.

In order to understand abnormalities, we must first know the normal characters of the urine. These embrace (a) Color—pale yellow or amber, depending on quantity; (b) odor—urinous, depending on concentration, diet and season ; (c), transparent, not viscid; (d), specific gravity, 1015–1025 ; albumen 1005–1030, depending on fluid ingesta ; (e) temperature when voided nearly 80° F.; (f) reaction, acid; (g) quantity in twenty-four hours 30–60 oz.; average 48 oz.; (h) sediment—none in twenty-four hours if kept in a cool place. When present it consists of organic or inorganic constituents, as urea, uric acid, chlorides and phosphates. Any or all of these characters may be modified within the limits of health or abnormally modified, constituting diseases or the symptom of disease.

We sometimes hear of the urina sanguines or cibi, or potu, but these designations have no special significance. In all examinations we must note the characters. As to the constituents, they may be classified into (a) organic as urea, urates, creatin, etc.; (b) inorganic, as chlorides, phosphates and sulphates. The theory of secretion, already alluded to, establishes, First, a physical filtering process ; second, a chemical transforming or elaborating office. The process is essentially *Osmosis*, but albumen remains in the blood because of its inactive osmotic tendency. Is it possible that in conditions of albuminuria, the disease has made the albumen more osmotic, or increased the permeability of the vessels, or is the blood richer in albumen, and because of increased pressure is it forced out? In other words, what differentiates physiological from pathological albuminuria? Doubtless the tubular epithelium plays an important part in this process ; for in disease, when the epithelium is destroyed or stripped off, the product accumulates.

The relation of urine excretion to health is likewise very important. This embraces quantity and quality, and should faithfully represent the ingesta and tissue disintegration. The preservation of health demands the regular action of the kidneys and the urinary tract. Too much or too little urine means abnormality and possible ill health. Decided temporary or permanent change in quality, either in characters or constituents, betokens wrong even before health positively suffers. So much for the first division of the subject. Second, being familiar with the usual or healthy characters and constituents, we are prepared to investigate the unusual, abnormal or unhealthy manifestations. First, all the normal constituents may be increased or diminished in quantity or altered in quality, and some may be absent entirely.

2nd. Certain new or abnormal substances may occur. These may depend on (a) functional, (b) organic conditions. As examples we may mention the increased phosphates in rickets and severe wasting disease of the nervous system; also the diminished chlorides in pneumonia and other febrile diseases, as well as the diminished urea in diabetes and neoplasma. You will note under the second group the presence of sugar or albumen, or fat, or pus, or blood. As illustrative of functional disorder of the urine, witness the increased phosphates after nervous excitement, as in public speaking. We also note dietetic diabetes, albuminuria, uræmia and uræturia. As examples of organic trouble, recall the albumen of nephrites, the sugar of diabetes, or the pus of suppurative conditions. If urine is alkaline on rising in the morning, look for a cause; but in a person living on a mixed diet, it may be faintly alkaline after meals. It must also be remembered, in taking sp. gr. just after urine is voided, that you must add 2 to the scale reading on account of temperature. In working a reliable analysis, one specimen of urine is not sufficient. You must have the entire quantity passed in twenty four hours. "Uncombined uric acid must be regarded as pathological." Excess of urates and hippurates exhibits imperfect oxidation of the tissues, and usually occurs in fleshy individuals, good livers, taking too little active exercise.

Nearly all the inorganic salts of the body are found in the urine—their quantity depending upon the food principally. These are divided into two classes, (a) those concerned in general nutrition, as NaCl, (b) those concerned in bone building, as Na_2 H & O_4. You may ask whence the significance of these in life insurance. Just this: The following question is asked the medical examiner by the company: "Is the applicant too lean or too fat?" The answer involves a knowledge of the processes of nutrition and assimilation and everything relating thereto. Moreover, although no company asks the analysis of the urine for NaCl yet its importance may be realized by late investigations and its examination required, because we know in certain diseases, as pneumonia, this important salt is greatly diminished and may be absent altogether.

The transparency of urine is important—depending on mucus, pus, fat, blood, epithelium, casts, urates and phosphates. Heat and alkalies do not affect mucus, but acetic acid will coagulate mucus. Heat clears up urates and increases phosphates. Blood, epithelium and cast may best be detected by the microscope, although very reliable chemical tests exist for blood, of which Mohammed's is probably the best. The peculiar oxidizing action of H_2O_2 on pus in wounds would suggest that it might be used for the detection of pus in the urine.

In regard to color, it depends on quality and quantity. Large drinkers of water or beer, hystericals, epileptics and diabetics pass pale urine. Febrile, jaundiced, and liver-diseased patients, and those in whom skin and lungs are very active, pass high-colored urine, due to formation of arœrythrin. It may also be due to certain drugs as carbolic acid, rhubarb and santonin.

Solids.—I must insist upon the importance of this in examinations, although their variation is wide in health. "The most striking variations are observed in diabetes and Bright's disease. In the former the solids are increased by the addition of sugar ; in the latter they are diminished by the loss of urea." They are easily estimated by Tropp's or Haesor's coefficient.

By a thorough knowledge of the abnormal characters or constituents, the examiner is enabled to locate disease in the urinary organs or somewhere in the general system. This study exhibits pathological conditions and these are of immense significance to (a) the doctor, acting in the capacity of agent for the company and in a higher capacity of agent for medical science. It becomes his duty to learn everything possible about the applicant and the processes of his body. They are important to the doctor from a reputation, a financial, a scientific and a duty point of view. He must needs fathom nature's secrets and expose the hidden processes of Protean pathology, thus enabling him to make a correct diagnosis and a true prognosis. (b) This knowledge is necessary to the company only from a monetary standpoint. Essentially they reject all applicants which do not promise them a safe investment. Careless, imperfect work of a medical examiner may cause a company untold losses. Indirectly through the company, accurate knowledge is necessary for the compilation of mortuary and other statistics. (c) The right of the applicant to a complete and careful test is a demand of justice. A careless examination may result in the loss of his assessments paid in for some time, if allowed to pass, or a rejection which may mean future failure to get insurance from other companies, as they invariably ask this question. It also means time and money lost to the applicant and his family. In addition, a knowledge gained on an unsuspected disease or condition may enable him to apply curative treatment, prolong his life many years, or even obtain insurance at a later date. Further reasons need scarcely be given of its significance to the applicant. As to the prognostic significance of solids, Millard says: "If the amount of solids falls much below what should be voided according to the diet and weight of the patient, and that persistently, there is ground for believing that serious pathological changes are being or have been developed."

Albumen and Sugar.—Owing to the fact that the largest percentage of life insurance policies are granted or rejected on the absence or presence of one or both of these abnormal constituents in urine, they deserve special attention.

Albumen.—"In the great majority of instances, though not invariably, if there be serious structural diseases of the kidneys, there will be albuminuria. This symptom should lead to diligent inquiry as to sufficiency of the kidney, and this may be determined by knowing the amount of solids excreted, especially urea." Albuminuria may be dietetic, but when accompanied by deficiency in quantity of urine and low sp. gr., it is evidence of serious structural lesion. In Bright's disease the general processes of nutrition may be so disordered that only a small quantity of urea and other solids results, and although a small quantity thus appears in the urine, yet the kidneys may be functionating perfectly and be entirely sufficient. It cannot be said, however, how long this equilibrium may last, for "the relations of physiology and pathology as regards excretion are to a considerable extent reciprocal." It is serum-albumen that occurs in the urine; and in urine with much of this blood albumen coagulation occurs at a low heat, but with little albumen no cloudiness occur, still 212° F. is reached. As to tests for albumen, very little need be said except to emphasize care and repetition and the use of control samples, especially in doubtful cases. I may, however, call attention to the new method of Golles, just published, sensitive to $\frac{1}{100}$ of 10 per cent. albumen. To 10ccm. of suspected urine add 10ccm. of strong HCl. Do not agitate the mixture, but immediately add with a pipette 2 to 3 drops of sig. calcis chlorinal. A white precipitate occurs if albumen be present. I shall use the first opportunity to try it, although Heller's contact method is the best test within my knowledge.

All urine not perfectly clear should be filtered before testing. Bence Jones has pointed out that not only is it true that a very small quantity of albumen may be dissolved by an excess of acid, and per contra, a drop or two of HNO_3 in strongly albuminous urine, on boiling, may get no ppt. because serum-album is changed into syntonin—noncoagulable by heat. You may neutralize the ppt. by an alkali, but not to excess, as you get dissolved alkali albumen. This in turn may be reduced by acid. In Heller's or the contact method, the brown or variously colored zone is caused by the action of acid on the arochrome, or in pathological specimens on the bile coloring matters or the indican or blood.

As to quantitative analysis for albumen, very little need be said, as life insurance companies reject all albuminurics regardless of quantity. It may be remarked just here that 2 per cent. is large, and that the expression $\frac{1}{8}$ or $\frac{1}{6}$ albumen refers to bulk or volume, not to weight.

In all nephritic conditions where albuminuria occurs, it is necessary to obtain daily quantitative analyses, but these are insignificant in life insurance. Albuminuria is sometimes spoken of as functional, other than the dietetic, but the elder Flint says: "Doubtless in all the so-called functional or dynamic deviations from health there are either molecular or cellular, that is, anatomical, changes at present inappreciable, or at all events undiscovered." We must therefore conclude that abnormal conditions of urine indicate morbid conditions of the kidneys, the blood, or the tissues. In acute active congestion of the kidneys albuminuria occurs, and it may be simply functional, depending on the ingestion of certain drugs, as turpentine, cantharides, cubebs, copaiba, oil of mustard, carbolic acid and certain potassium salts. If this be merely functional, it were not right to condemn an applicant on this alone. The albuminuria of acute Bright's is due partly to inflammatory alterations of the walls of the renal capillaries, to changes in the epithelium, especially that covering the glomeruli, and also to changes in the blood pressure. The acute rarely assumes the chronic form. Chronic Bright's is of more significance to insurance companies. Bright's disease has three distinct types, and it is possible to diagnosticate and prognosticate them by the urine, especially in connection with the clinical history. Hear a few significant points in regard to each.

1. Large non-waxy kidney. Quantity usually diminished unless cardiac hypertrophy exists; increasing arterial tension; sp. gr. varies per quantity, color yellow turbid, much albumen and sediment, also casts, cells and granules.

2. Waxy kidney. Quantity small; albumen greatest, and if *persistent foam* is a reliable test, it ought to be manifested here. Dr. J. H. Wysong insists on the significance of persistent foam indicating albuminous urine.

As far as my observation extends, this is a very unreliable guide, as foam remaining quite a time is due to copious indulgences in beer and cider, to fermentative changes in the urine, and possibly to some therapeutic agents. In very waxy kidney, urine is abundant, pale, low sp. gr.

1005—little sediment and few casts. Characters of urine in this type depend on the amount of waxy change and coincident inflammation.

3. Small granular or cirrhotic kidney, often normal urine. Albumen and casts may be absent entirely. This type then becomes of paramount importance in insurance examinations. You may, however, find polyuria, and then sp. gr. is low as 1008, color pale yellow and little sediment. The smaller the quantity of urine the greater the sediment and albumen. Great albuminuria is usually accompanied by marked dropsy, anæmia and pallor, due to loss of albumen. It may also be remarked that bloody urine is usually albuminous, as is also the urine from a cystic kidney.

So much for the diagnostic significance of albumen. In regard to its prognostic importance, I believe if the albumen in the urine be serum-albumen, neither functional nor dietetic, and not the result of cystitis, after repeated testing it should invariably be condemned. This statement implies that functional or dietetic or cystitis albuminuria may be looked upon favorably. Of course well-defined organic albuminuria is never considered. I may quote another opinion from Millard: "Should cases of chronic albuminuria, simply from the fact of albumen being found, be rejected by life assurance examiners? I believe they *should not.* I have known some albuminuric patients who enjoyed practically good health and lived to a good age. Albuminuria is not always a more threatening symptom than other symptoms. An albuminuric patient may occasionally be in every respect a very good risk. There are cases where repeated and comprehensive examinations must be made before the examiner can decide as to the interest of the company. I have known albuminuric subjects rejected whose health was good and applicants with other affections more serious accepted."

Peptones.—While no insurance company within my information mentions peptonuria, I believe its significance will yet be realized and practically regarded. It is a congener and closely related to albumen, indeed is a derivative through the digestive processes of the organic nitrogenized foods or the class of albuminoids. These are first converted into albuminates or acid albumen, then into propeptones or hemialbumose, and finally into peptones. A very important difference between peptones and albumen is, that the former are very osmotic the latter very little so. Now is it not possible when peptones are found in the urine to predicate its predecessor in a short time, when the kidney structure becomes so far destroyed that its filtering or osmotic function is lost, and pure albumen may flow freely through its poneuchyma? Tyson says peptones may result from the long-continued action of acids and alkalies on albumen, by the decomposing action of bacteria, and by long-continued heat of 268 to 290° F. They are not precipitated by heat or HUO_3, but by $HgCl_2$, tanium and sodium tungstole—but this may be redissolved by heat. Peptones are a constant constituent of pus. The theory has been advanced that they are converted into albumen at the moment of absorption into the circulation. Now if peptonuria occurs, this metamorphosis does not take place. And why?

Sugar.—" It is not disease of the kidneys that gives rise to sugar, excess of urea, urates, uric acid and phosphates, but these changes are due to disturbance in the nutrition and disassimilation." Bernard proved that the liver in its glycogenic function acts as a ductless gland. Let me give Flint's theory of glycosuria. The carbohydrates taken as food are conveyed to the liver, changed into glycogen, stored up, and as the system demands, changed by the liver ferment into sugar and discharged into the circulation. Usually it is lost in the lungs, but if in great quantity, it goes on to the kidneys, to be eliminated as a foreign substance. Now if the glycogenic action of the liver is interfered with, we get glycohæmia and glycosuria. It may be dietectic, or due to structural lesion in the liver. It is said by some to be a neurosis, and it is well known that irritation of the floor of the fourth ventricle produces temporary diabetes, as do also irritating vapors in the lungs by reflex action on medulla oblongata, through the vagus. After etherization temporary diabetes, and after traumatism fatal diabetes supervenes from injury to the base of the brain. You may occasionally note a temporary diabetes in health, and it may be continued for some time. Prolonged glycosuria is diabetes mellitus, and is accompanied by great destruction in the nitrogenized organs and tissues of the body. " Permanent glycosuria may appear as a symptom of certain affections of the central nervous system, particularly tumors and hemorrhages into the medulla." Although when sugar is found in the urine the case is considered hopeless, if not of the diabetic variety, and no well recognized pathology is yet advanced, is not production diabetes by experiment on the nervous system a suggestion to us that there is a profound alteration in the function of this important organ? As examples, injuries to the brain and spinal cord, and sympathetic nerves and ganglia, irritation of the depressor nerves, poisoning with narcotics, Co_2, Curore and NaCl, all seem to show it is produced through the nervous system, and as the presence of sugar is but a symptom, an index finger, a sign post to the doctor, will it not be possible to study nervous disorder or disintegration by analysis of the urine, and perchance save many of these doomed ones to themselves and to the insurance companies?

The transient occurrence of traces of sugar is of no more significance than transient and occasional albuminuria. Temporary glycosuria occurs in hystericals, epileptics, after anæsthesia and violent emotions, and these must be eliminated in life insurance examinations. The dietetic and functional varieties after anæsthesia or childbirth offer a favorable prognosis, but the organic type is always fatal, and is of no significance to insurance companies except for rejection.

Characters of diabetic urine or polyuria, color clear and pale, sweetish taste and odor. Reaction acid and sp. gr. 1030-1070.

Urinary Deposits. Normal urine in a cool place has no sediment in twenty-four hours. It may be abnormal simply because of concentration—there is not water enough to hold the salt in solution. The deposits are either white or colored. Among the white are acid sodium urate, cystine, earthy and phosphates. These are important, as they signify respectively deficient oxidation, as in fevers—in cystine calculus, disintegration of nervous substance, and diseases of the bones, and after mental strain. In strictly renal diseases the phosphates are diminished. Among colored precipitates are uric acid, urates readily dissipated by heat. As soon as urine becomes ammoniacal you get triple phosphates, urate of ammonium, earthy phosphates and calcium carbonate. These are significant as showing the uric acid diathesis, and possible tendency toward gout, rheumatism and urinary calculi.

Organized Deposits.—Blood. It may be of urethral, cystic or renal origin, and these may be distinguished by quality, quantity, color, reaction, miscibility, etc. It must not be mistaken for dark urine, due to chemical or therapeutic agents, as carbolic acid, rhubarb, senna, the bile-coloring matters, or the concentrated urine of fevers. Blood occurs in urethritis, cystitis, Bright's, scarlatina, purpura, scurvy, profound malarial poisoning, and in many of the acute diseases. Its significance in urinalysis depends on the prognosis of the causative disease.

Mucus and pus are important, as they signify either urethritis, cystitis or nephritis. It may be well to remember that pus always contains albumen. Of necessity all urines containing pus from renal diseases are excluded, but the others may be admitted, *i.e.*, those from urethritis, prostatitis or cystitis.

Epithelium is significant according to quality and quantity, that is, whether from the urinary passage or from the kidney, and also showing whether the destructive process be mild or severe.

Casts are important, and always mean kidney lesion, because they are molds of the uriniferous tubules, caused by escape through rupture or transudation of a coagulable substance of the blood. It then solidifies, contracts and passes out. They are distinguished as epithelial, hyaline, blood, granular, waxy, fatty and mucus casts. Further elaboration of these is useless, as all are refused.

In searching the printed forms of various life insurance companies, I find most companies *require* a chemical analysis of the urine. Some do not, however. They usually ask the sp. gr., reaction, presence or absence of albumen and sugar. Others ask color, reaction, sp. gr., albumen, sugar, sediment and microscopical examinations for casts, pus, blood and crystals. All ask this question: "Is there any evidence of Bright's disease, cystitis and diabetes?" How unreliable must be the answer without urinalysis! The best companies, as the Provident, the New York Mutual and the Massachusetts Mutual, invariably require chemical analysis, and microscopical if thought necessary. No doctor ought ever to recommend any applicant without thorough examination of the urine, whether *required or not.* The clashing conflict between rival companies to cheapen insurance rates and make fewer rigid requirements has resulted disastrously. I quote from GAILLARD'S JOURNAL of Nov., 1891.

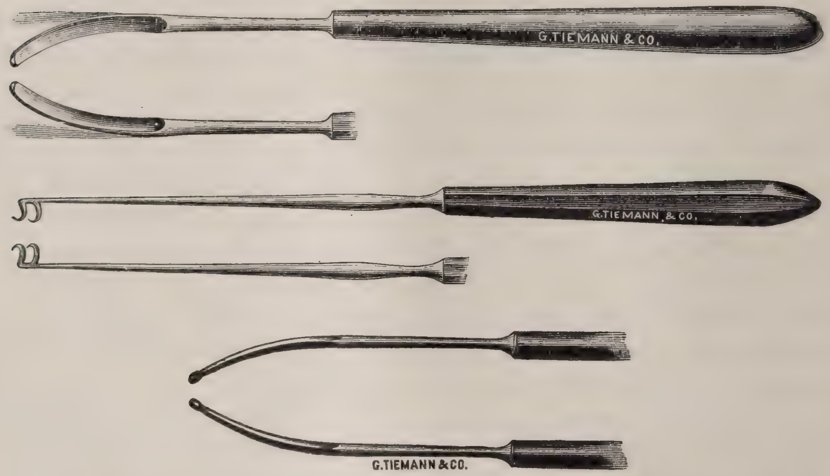
"A prominent insurance company is employing female medical examiners. The company believes that women can sometimes ascertain facts which men can not get hold of, and that their so-called intuitive knowledge will often lead them to better conclusions than men are likely to reach. The experiment is worth trying, as is the experiment of some leading companies in England of abolishing medical examinations altogether. Very little that is useful will result from either experiment, but it is well for the profession to realize that much dissatisfaction is felt among insurance companies in regard to the present order of things, and those physicians who hold places of trust in insurance should be on the qui vive to improve their methods by making judicious use of every advance in science. A word to the wise is sufficient."

The doctors are by no means solely to blame. The companies are continually reducing examination fees. A man comes into your office and asks for an examination of his heart, lungs and abdominal organs. You make it, and charge him five dollars. Another wants a thorough examination of his urine, and you charge him five dollars; but the insurance company demands all this, and even more for three dollars, and some as low as one dollar, and possibly repeated examinations with no extra fee. These things ought not so to be. Why work for these large, rich and powerful corporations cheaper than for private individuals, many of whom are poor. If prices continue to be thus prostituted, medicine becomes a mere trade for a living, science succumbs, and careful, detailed, accurate analysis of the urine becomes a chimera totally without value on significance. To pour a little HUO_3 into a little urine, heat it a moment and look for a zone of cloudiness; to pour a little of Fehling's solution into urine, heat and look for a red precipitate, does not constitute careful analysis, and does not guarantee significance or safety either to the company, the doctor or the applicant.

ARTICLE IV.

HOBBS' NEW TONSILLOTOME.[1]

By Arthur G. Hobbs, M.D., Ex-President of the American Rhinological Association, Prof. of Ophthalmology, Otology and Rhino-Pharyngology in the Southern Medical College, Atlanta, Ga., Member of the Georgia State Medical Association, The American Medical Association, The Atlanta Society of Medicine, etc., etc.



The instruments illustrated above are the practical outcome of my efforts through several years to do away with some of the objections to the instruments most commonly used for excising hypertrophical tonsils —for example: the rhino-tonsillotomes, the guillotines, wire loops, etc., etc.

I still, however, use the ring blades in young children and in other cases where the tonsil projects decidedly with a base but little, if at all, larger than the body.

Most tonsillar hypertrophies do not, however, conform to the above varieties; hence I have sought a more suitable instrument.

The objections to the guillotine or ringed instruments is that the latter especially so often leave a margin of bruised tissue which in many cases ends in slough, and with neither of them is the operator quite certain of the exact amount of the tonsil he will clip, especially if the attempt is made on a mass that is soft, broad and nodulated. The cold wire snare causes great pain and requires a much longer time, and moreover, it leaves a contused stump unless the whole organ be extirpated, which I never do intentionally. The hot wire, even with the most approved guards, endangers the pillars, and is, like the cold wire, quite a formidable instrument, at least in the mind of the patient. The simplest means and the one least formidable to the patient, other things being equal, is best. Especially is this true if the instrument chosen can be relied upon to do the work quickly, leave a smooth stump that will heal without a slough, and at the same time make the section just where the operator desires it.

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[1] Read before the Georgia State Medical Association in April, 1892.

Some years ago I used the ordinary blunt bistoury with either a vusellum forceps or a tenaculum. I found the vusellum objectionable, because its hold could not be quickly loosened in case of gauging, and the tenaculum hook was too long and tore loose more readily than a double hook. This latter instrument, with its hooks on the sides, is also more easily introduced and it can be instantly loosened by a single rotation of the handle.

The blades, imperfectly illustrated above, are curved both on the flat and on the edge, and are in pairs, right and left.

Either blade may, however, be used on either tonsil, especially if the operator is ambidextrous, by making the section upward or downward according to the curve. But in most cases it is easiest and always safest to make the section upward to avoid cutting the base of the tongue; the flat curve of the blade will prevent the dangers to the posterior pillar.

The firm hold by the double hook enables the operator to lift the mass of tonsil tissue out of its bed from between the pillars to any extent, even when it is partly overlapped by large pillars. In a total of something over four thousand tonsil excisions, I find myself choosing these instruments now in at least 75 per cent. of my operations. Messrs. Tiemann & Co., of New York, are the makers.

ORIGINAL LECTURE.

SYMPATHETIC OPHTHALMIA.

Delivered at the New York Polyclinic by J. HERBERT CLAIBORNE, M.D.

GENTLEMEN: I wished this morning to present you to a patient with a very interesting eye. She promised to be here to-day, but she has not made her appearance. I regret not being able to show you this case, for it is a subject I have not yet touched upon here, and one that is best taught by showing you the patient.

The patient is a young woman who, in childhood, received a blow in the eye from a knife: the cornea had been perforated and part of the contents of the eye escaped, so that sight was lost at the time of the accident. When I saw her the other day the injured eye had the appearance of a small button; the cornea had become very small, and through it the iris could be seen, looking like a dark haze; the eye-ball lay back in the orbital cavity, so that when the lids were partly closed it was impossible to tell whether there was any eye there or not. When I asked her how long the eye had been in that condition, she replied it had been so all her life and I suspected it was a case of congenital microphthalmus, but later, when I got the history, I changed my opinion. She came to me because the injured eye, which had never troubled her before, had become inflamed and very painful; what was left of the eye-ball was as red as a piece of scarlet flannel; it was tender on pressure and there was some secretion; there was constant pain of a boring character that passed up the side of the head over the brow; the girl presented the characteristic symptoms of sympathetic ophthalmia-iridocyclitis.

Whenever the ciliary reigon is much inflamed, there is reason to suspect the presence of iridocyclitis. The diagnosis is important for the disease is serious. It probably never gets well, is nearly always the result of infection from without, and follows punctured wounds of the eye-ball or blows that cause rupture of the globe and permit the entrance of atmospheric air. When a patient comes to us with rupture of the globe, we must take into consideration the fact that the interior of that globe has been subjected to atmospheric influences. It not infrequently happens that a blow on the eye will rupture the globe, yet leave the conjunctiva over it intact; this simplifies matters; for, thin as the conjunctiva is, microbes are not able to pass through it; but, if the conjuntiva be ruptured, air will enter, and with it the possibility of iridocyclitis. I would not have you go away with the idea there is only one form of iridocyclitis, namely, that caused by infection from without; for we know that every now and then we see cases in which an eye takes on a condition known as iridocyclitis and becomes a source of danger to its fellow without there being any wound of the globe. When this does occur, it can only be explained by the theory of infection through the general system. In the case I refer to, infection took place at the time of the injury years ago; the eye healed and what is known as anterior phthisis took place; the whole eye shrunk, the sclera became hard and the globe sank back in the orbital cavity; this state of affairs has lasted for fifteen years, the eye remaining in a condition of quiescence. If you had seen it a while ago, you would have said that it was a fairly good eye, though she could not see with it, and much better than none; yet that eye has been a constant source of danger to the girl; a short time ago, it suddenly became inflamed and very painful; how can you explain that? They say that grains of wheat have been found in the interior of mummies thousands of years old and have germinated afterward. Perhaps microbes can hold themselves in a state of quiescence for years and then suddenly set up inflammation. However this may be, the inflammation in the girl's eye is a new iridocyclitis; its presence is a menace to the good eye, and I shall tell her of the necessity of having it removed. So far the other eye has not become affected; there is no irritation, no redness and no fear of light, but the inflammation in the injured eye is of only a few days standing, and it may extend to the other eye at any time and probably will.

The cause of this sympathetic ophthalmia has been a source of reflection, experiment and supposition ever since it was recognized. For years and years it was explained by the irritation theory; that is to say, it was held that the ciliary nerves on one side being involved in inflammation and squeezed upon by the contracted sclera, were in a condition of constant irritation and that in some way there was a transfer of irritation from one side to the other.

During the last ten years investigations have been made to discover the microbe of sympathetic ophthalmia. Deutschmann, of Germany, was the first to make experiments on rabbits in this direction. He stated that material containing microbes could be made to pass from one optic nerve to the other, setting up an inflammation in the second eye like that in the first. This he settled to his own satisfaction, though it was not generally accepted.

More recently Randolph, of Baltimore, has repeated the experiments of Deutschmann and has come to the conclusion that the latter deceived himself, in which opinion he is upheld by an editorial in the *London Lancet.* Deutschmann's experiments cannot be looked upon as proving anything; no one knows yet what causes sympathetic ophthalmia; medical opinion is undecided on this point. That an inflammation so intense and destructive as this should be set up by irritation through the sympathetic nervous system is not within the limit of my faith; that it is set up by a transmission of virus, is in the highest degree probable. Though Deutschmann has not proved his position nor the theory he put forth, he has given us a new and rational idea as to the manner in which the transfer of infected material takes place.

Inasmuch as this disease is a matter of microbes, you would expect to find pus, and sometimes you do; there are two forms of the disease, suppurative iridocyclitis and plastic iridocyclitis. The first symptoms of sympathetic ophthalmia are photophobia, lachrymation and filling of the blood-vessels that run to the cornea in straight lines; there is tenderness on pressure in the ciliary region, the cornea becomes cloudy, the aqueous humor dirty, the eye takes on a fishy, leaden appearance and becomes very painful; sight is practically lost. After a short while the ciliary region sinks in, atrophy takes place, and there will be, in one or two places, an absence of the perfect rotundity of the normal eye; the eye is then hopelessly lost, and is apt to be painful as long as it remains in the head.

The question whether or not to remove an eye with iridocyclitis is an important one and often a difficult matter to decide. When a man comes to you with an eye hopelessly lost, you will say to yourself, "Should that eye be enucleated at once, or shall I wait to see what follows?" and you will ponder long on the subject. If you take it out, you will wish you had not; if you leave it in, you will be constantly fearing that sympathetic ophthalmia may arise. If you are brought up before a court of law for having removed an eye, the lawyer may perhaps prove that you ought not to have taken it out; or the patient may lose his good eye from sympathetic ophthalmia because you have failed to remove the bad one, and sue you on account of it. All these things must be taken into consideration, and the eye-surgeon recognizes the immense importance of the prognosis in these cases. People in the lower walks of life are especially apt to bring lawsuits; the loss of an eye throws them into an unfortunate situation, as it gives other people an unpleasant impression of them, and no one wishes to employ them; if the patient is a mechanic, he will not be able to do such good work as he did when he had two eyes. There is a clear reason for this, for a man cannot appreciate the solidity and projection of bodies with one eye; two eyes enable him to see them from both sides. For the same reason a man with one eye could never be a painter of objects that are near by, though he might paint distant scenes in which solidity and projection are lost, such as trees and clouds banked up against the sky.

To return to the question of removing or not removing an eye, no definite rules can be laid down. It seems to me to be pretty clearly marked out that when an injured eye takes on a severe inflammation, when there is great pain and sight is lost within a few days, it is best to remove the eye; if the globe has been ruptured, if it be a large rupture and the conjunctiva be ruptured also, so that air enters the interior of the eye, it is best to remove that eye instantaneously; eyes that have received punctured wounds from blunt instruments, knives and bits of steel, can as a rule be permitted to remain for a few days until you see what they are going to do; in the mean time infection or sympathetic irritation may pass along the optic nerve and attack the good eye, setting up an inflammation there after you have finally removed the bad eye and both will be lost.

They say that the infectious material passes along the optic nerve. However that may be, I know that often infectious material is left after an enucleation when the optic nerve is cut off too near the globe. For this reason, I have always laid great stress upon the necessity of cutting the optic nerve far back from the ball. Do not push your scissors into the brain, but leave a good long stem to the apple.

Years after an iridocyclitis has been set up and subsided, it may be started up by direct force, by exposure to the glare of light, or by some great excitement; it will become suddenly inflamed, the micobes will take on new vitality after having been in a state of quiescence for years, and a new iridocyclitis be set up. Such an eye should be removed at once.

Sympathetic ophthalmia is a subject on which no man can lecture with certainty; he can only tell you the symptoms and when it is apt to occur. It is the most insidious disease, not excepting glaucoma, in the whole realm of ophthalmology; it is a subject on which the greatest experts are unable to agree. There is one sound principle to be remembered in connection with this disease: If the vision of an eye is lost as the result of an injury, that eye should be removed, and with this concise reflection, I will close the subject.

ORIGINAL FRENCH TRANSLATION

TERTIARY SYPHILITIC ANGINAS.

By Dr. Gouguenheim.—Translated for Gaillard's Medical Journal by H. McS. Gamble, M.D., Moorfield, W. Va.

Tertiary syphilis of the pharynx is one of the most common manifestations of this diathesis. In the cliniques of laryngology we meet with frequent examples of it every day. The facility with which it is discovered and the large number of cases that it presents have permitted every physician to observe its different symptoms. This affection has been described particularly by syphilographers and dermatologists in general treatises upon these diseases. Beside these, a few physicians have conducted interesting studies upon this subject—Lancereaux, for example. In 1871, M. Isambert, one of my predecessors in this hospital, read before the hospital Medical Society a very remarkable work upon what he called grave scrofulous angina. At the same time, and before the same society M. Constantine Paul reported a certain number of similar cases; a little while afterward he suggested to Fougere, one of his pupils, his thesis upon the same subject. We will mention also the thesis of Homolle. Twenty years before, in England, Hamilton had also described grave scrofulous angina.

Thus is summed up the history of an affection the symptoms of which have been attributed by some to syphilis, by others to scrofula and to lupus. Isambert, in his memoir, has assigned to scrofula an entirely too important rôle. In his very remarkable descriptions, moreover, more than one statement deserves to be contested, by reason of the causal explanations he has given; and before the medical society some physicians maintained, with proofs to support the fact, that scrofula was not always the cause of these special anginas. In reading the work of Isambert, one sees how frequently errors may occur in the differential diagnosis of specific tertiary anginas and grave scrofulous anginas. It was by aid of two signs alone that Isambert distinguished these affections: the seat of the disease and the result given by the specific treatment. In his opinion, in fact, it is the pharynx that is attacked in scrofulous angina, while tertiary syphilis possesses the veil of the palate as its place of election.

This sign is really of very little value, for syphilis may frequently invade the pharynx, and I have seen cases in which the syphilitic disorders localized in this region were cured even more readily than those located upon the veil of the palate, their superficial seat rendering them less refractory to treatment. As to the diagnostic value attributed by Isambert to therapeutics, that is a sign the importance of which is altogether relative in the cases he describes. In his opinion, according to the old therapeutical adage: *naturam morborum ostendunt curationes*, every angina that was not cured by mercury was not of specific origin. The manner in which Isambert carried out the treatment has given rise to more than one error of interpretation; the duration of the treatment of his patients was too short. If at the end of fifteen days he obtained no good result, he directed the use of mercury to be stopped, and the conclusion was that the disease had no other cause than scrofula. This was a profound error, for the specific treatment ought to be continued persistently and it is upon enduring patience that success often depends. . . To give mercury in scrofulous angina, said Isambert, is to do harm. If this remedy acts badly, or does not act at all, it is because the organ is scrofulous." Is this a conclusive pooof, and does not mercury often act in an importunate manner in a number of specific manifestations in persons who cannot support it. Finally, as a last evidence of the exaggeration of Isambert, we mention the fact that several of his patients were treated and cured by iodide of potassium. Were they not syphilitics?

I do not hesitate to affirm that the majority of the cases of Isambert, of Constantin Paul and of Fougère were simply cases of tertiary syphilitic angina. It was claimed, however, that in these affections there were tendencies to perforation and rapid breaking down. But is this not also the character of specific angina? It is true that outside of syphilis, in subjects of lupus, for example, anginas with rapid destruction of the tissues may manifest themselves; but, notwithstanding all that, the destruction of tissues takes place less rapidly. It may even be that, among the observations of the authors cited above, certain cases of lupus, that had commenced by the entrance of the nasal fossæ, were nothing else than syphilides. We see then how easy it is to contest the nature of angina as Isambert understood it. In my view, it is almost always in these cases only a question of tertiary syphilitic anginas; and when the diagnosis leaves any doubt, the specific treatment ought not to be renounced without having tested it by long perseverance.

Etiology.—Tertiary anginas appear from two to four years after the début of syphilis. Cases are mentioned that occurred after a greater lapse of time—twelve or fifteen years after the infection. Some have been known to manifest themselves after forty years. These manifestations also frequently recognize heredity as their cause: in the hospitals for children, numerous examples of them are seen. For my part, I have seen children and youths of the age of 10 to 20 years who had presented no symptoms of acquired syph ilis attacked with tertiary angina, and in whom specific treatment yielded the best results.

Seat.—Tertiary angina attacks, in order of frequency, the veil of the palate, then the posterior aspect of the pharynx, sometimes both together and finally, but very rarely, the tonsil. In a recent memoir, Dr. Nattier has disscused those symptoms of tertiary angina of the tonsil the manifestations of which are exceptional; it is for this reason that he has been able, both in France and abroad, to collect but a very restricted number of cases. This form is important, for it may give rise to an error in diagnosis for cancer of the tonsil, an error formerly committed by Blanden, Velpeau, and others.

Form.—Tertiary anginas present two varieties in their development: they either spread upon the surface, or they extend in depth; whence, two well-defined varieties: 1st, superficial tertiary syphilitic angina; 2d, deep tertiary syphilitic angina—a division admitted by Lancereaux. The first is peculiarly common upon the pharynx and the second upon the veil of the palate, the thinness and slight resistance of which render perforation more facile.

Superficial Tertiary Anginas.—These present themselves under the forms of more or less extended ulcerations, circular or elongated, a few centimeters in length, commencing upon the posterior aspect of the pharynx, sometimes upon its superior portion, and reaching toward the œsophagus. A thick mucus covers them. Around them is seen a more or less salient ridge, without perpendicular edges. Their length depends upon that of the pharynx. Sometimes, the entrance of the digestive and respiratory tracts is invaded by the same process, but the more frequently, there is a very clear distinction between the diathesic manifestations that pertain to these latter organs.

After recovery, the tertiary ulcerations of the pharynx may leave whitish, superficial and characteristic cicatrices.

The veil of the palate may also present superficial changes. We see, in this case, a marginal ulceration upon the sides of the uvula and of the arch of the veil; the uvula appears then longer upon one side, larger, more pendant than in the normal state. Between the uvula and the veil a more or less deep furrow shows itself; the uvula, thickened or not, no longer holds to the veil except by a very narrow band, and sometimes ablation of the uvula may be demanded because of the impediment to cicatrization produced by it. Before performing this operation, one ought nevertheless to remember the utility of all the tissues still sound at the time of the reparation of syphilitic ulcers, and retrench this appendage only in case of absolute necessity. The superficial progress of syphilis is ordinarily easy to check. The superficial variety of tertiary angina is, in fact, that of which the treatment most promptly effects a cure. You will see two examples of it among the patients under our charge.

PROFOUND PERFORATING TERTIARY ANGINAS.

Here it is, above all, the veil of the palate that is involved. These perforations are single or multiple, of variable aspect, presenting upon their borders a discrete suppuration. Their seat is the more frequently above the uvula, which sometimes, without participating in the ulceration, is separated from the veil and prolapsing. Generally, these perforations are located in the middle of the veil of the palate, sometimes upon the lateral portions, and have but little tendency to invade the pillars. Notwithstanding their extent, they are susceptible of cure, and I have seen a large number of them cured by a specific treatment and a local therapy methodically applied.

How are these perforations of the veil of the palate produced? Their commencement is insidious. At the upper portion of the veil and behind there is formed at first an ulceration of little sensibility which little by little is developed without the patient being much inconvenienced. To a large ulceration succeeds a small perforation, the orifice of which toward the mouth is very narrow. There is observed previous to this perforation a dark tumefaction of the buccal mucous membrane, which becomes so thin that in a moment, and in spite of all efforts toward treatment, perforation inevitably takes place.

In consequence of these ulcerations of the veil of the palate, when the pillars have participated or not in the work of destruction, a new trouble may arise; it is adhesion of the veil to the posterior aspect of the pharynx.. The difficulty of the cure of these adhesions, their inconveniences and relative frequency constitute a grave condition. How is this adhesion produced? Is it by adhesions of a sound to an ulcerated part? This reason is not always the correct one, and I have seen in more than one case parts that were not ulcerated contract between each other an intimate adhesion, probably by simple contact. Two cases of this kind have been reported by Paul (de Breslau) whose memoir was analyzed by Verneuil in the *Archives de Medicine* of 1865. How explain the genesis of these adhesions? The different explanations that have been given of them are more or less contestable. It has been said (Schesh, 1876) that the veil of the palate had a natural tendency to rise upward and backward, but that this tendency was checked by paroxysms of coughing and the constant passage of the mucosities of the upper pharynx towards the base. However, there are cases in which the cough can no longer produce this result; for example when there exists, which is more frequently the case, a perforation; there the air escapes through the opening and can no longer present an obstacle to the approachment. Some cases to which this explanation is not applicable are those, rare it is true, that I have observed, wherein this adhesion occurred although there were no perforations.

The mechanism of these adhesions is very difficult to explain, the more so that, sometimes, the veil and the uvula appear to be applied by their lower extremity without apparent alteration, and applied so hermetically that there is complete fusion between the walls of the pharynx and the veil, and but little possibility of operative intervention.

In these cases, the senses of hearing and smell are entirely abolished.

All ulcerations do not tend perforce to perforation of the veil of the palate. If the ulcerative action has above all invaded the pillars, we find ourselves then in the presence of a syndrome constituted by swelling and redness of the tonsil, as well as of the pillars and veil, with a very great difficulty of deglutition. The diagnosis, in these cases, may be extremely difficult at the commencement, and, for my part, I have seen patients in regard to whom distinguished syphilographers were unable at this moment, unhesitatingly, to give a precise opinion.

(*To be continued.*)

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SELECTIONS.

THE DOUCHE.*

By Simon Baruch, M.D., Physician to the Manhattan General Hospital, Juvenile Asylum, and Montefiore Home for Chronic Invalids.

The remarkable therapeutic success attained by the French physicians, chief among whom stands Charcot, with this method of utilizing water in many diseases which prove rebellious to medication and all other treatment, warrants a brief descriptive explanation of this hydriatric procedure.

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* By permission from Illustrated Medicine and Surgery. Copyright 1892. E. B. Treat, N. Y.

The drawing illustrates the act of douching, the attitude of physician and patient, and the apparatus. The douche is a method of applying water, in a more or less concentrated form, in a stream propelled by more or less atmospheric pressure.

The effects aimed at by all hydrotherapeutic procedures are thermic and mechanical.

The sudden impact of cold or cool water upon the periphery produces a contraction of the coats of the cutaneous vessels; the shock thus induced is conveyed to the central nervous system, thence by reflex to other organs.

The gasp for breath illustrates the reflex effect upon the respiratory centre. The blood is driven from the surface to the deeper parts, but returns as soon as the douche is discontinued, under the physiological law of reaction. This is the aim of the douche—to arouse dormant vital energy by inducing reaction in the various parts to which it is applied.

It is a discipline to the peripheral nerves and vessels which no medicinal agent is capable of inducing. The ebb and flow of blood and reflex action aroused by the douche represent in brief its chief effect.

These manifestations are modified according to the temperature and mechanical action. The former is under control by admixture from the supply pipe of cold and warm water; the latter by increasing or diminishing the atmospheric pressure. Just as the thermometer indicates the temperature of a douche so does the pressure gauge indicate the mechanical effect.

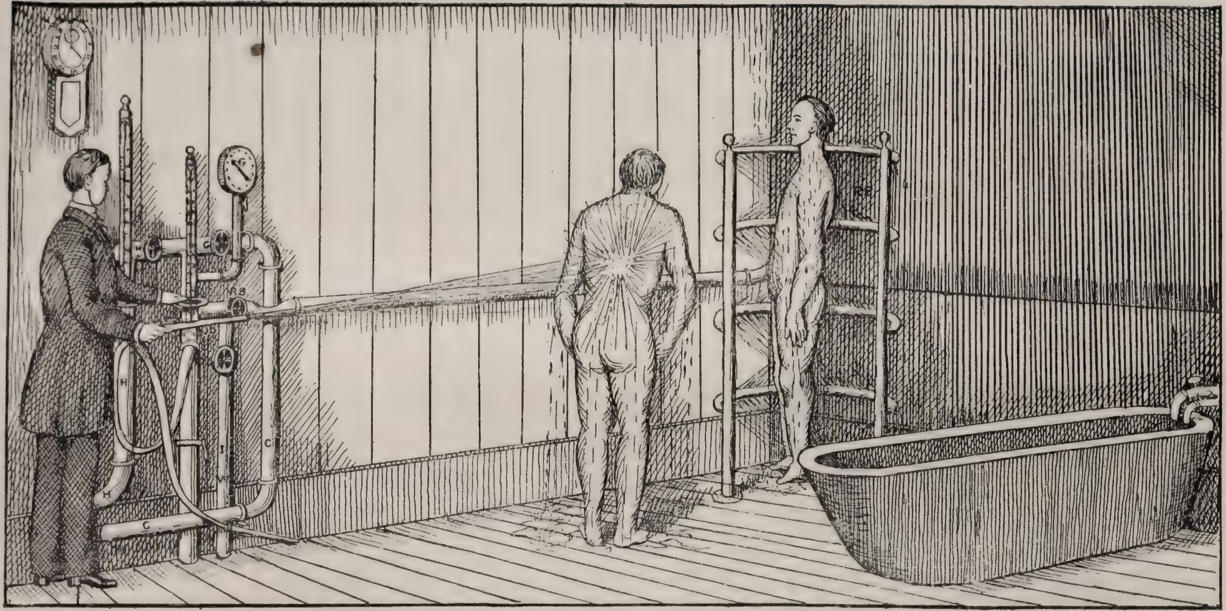
In the accompanying drawing the hot water supply is at H, under control of the valve H; the outlet into the hose is at H, H. The cold water supply pipe is at C, under control of the valve C; its outlet is into the main exit pipe, controlled by the valve at C, H. The water mixes at M. According to the opening in the valves the hot and cold currents are admitted and controlled as they are in an ordinary bathtub.

At R B is the supply pipe for the rain-bath. At G is the pressure gauge. W is the waste pipe. Through the latter the water is allowed to run until the temperature is adjusted. The manner of application is shown in the drawing.

This represents at J D the jet douche. This may be changed by attaching the sprinkling nozzle to the spray douche, or by applying a flat piece of metal over the nozzle outlet into a fan douche.

The rain-bath, R B, is a douche driving a large number of jets upon the skin. Their impact under a pressure of 20 lbs. is sufficient to dilate the peripheral vessels, illustrating the valuable reactive effect of such a bath

The therapeutic applications are varied.



Douche Room at the Hydriatic Institute, New York.

Note.—The Douche Room here depicted is built of marble walls, eight feet high, resting upon a slanting floor of boards covered with zinc. The lower edges of the wide marble slabs rest within the upturned border of zinc, thus readily conducting the water falling from them upon the floor. Upon the latter rest small wooden sleepers, supporting a slatted floor, which permits the water flowing from patients at once to fall upon the slanting zinc floor, which conducts it to the drain.

For anæmia and general debility, without organic involvement, with or without gastric trouble, the rain-bath from 65° to 75° is of great value. In the Montefiore Home its chief application has been in phthisis. Numerous excellent results are recorded in this institution of restoration to apparent health, of cases whose object in coming to the institution was to spend their remaining days in comfort.

Administered daily for two to five minutes, from 65° to 80°, it relieves pyrexia, improves the appetite, deepens the respiration, steadies and slows the heart, and refreshes the nervous system, through which it gives tone to all the systemic functions.

In neurasthenia (of the depressed or melancholic type), with or without gastric, cardiac or other manifestations, the jet or fan douche, at 45° to 50°, which promenades over the body for five to thirty seconds, under a pressure of 20 to 30 lbs., is a therapeutic agent of approved value. In the same type of hysteria also this douche is efficacious, as demonstrated by Charcot.

In the erethetic type of these diseases, and in other neuroses, accompanied by manifestations of excitement, the douche is inapplicable. In these cases the German method of wet packs is useful.

In chronic gastric disturbances, accompanied by anæmia or depression, the douche at 60° to 75° under a pressure of 20 lbs., for two to four minutes, or the rain-bath, has afforded me good results after dietetic and other treatment has failed.

In simple anæmia or chlorosis, in all organic diseases in which a faulty hæmatosis is manifested, the cold douche has signally demonstrated its value on the hæmometer of Fleischl. In obesity, chronic gout and rheumatism striking curative results have been obtained from hot-air baths (to which the head is not exposed) followed by cold general douches. Locally, the Scotch douche, consisting of alternating hot and cold streams to the swollen joints, encourages absorption of pathological product. In obesity and other disturbances of perverted tissue metamorphosis, this method of diverting the latter into normal channels has been clinically and experimentally successful. (See A. Frey in Volkmann's *Sammlung Klinischer Vortraege.*)

In locomotor ataxia and other spinal or cerebral organic lesions, the cold douche must be avoided as a dangerous remedy, while warm and hot douches and rain-baths, under slight pressure—10 to 15 lbs., and of long duration (5 to 10 minutes)—will be found useful. The warm baths, judiciously applied with friction by an attendant, are far more efficacious in these cases, as shown by Leyden and Hoesslein.

The chief element in this, as in all other hydrotherapeutic procedures, is precision. Upon this depends success, and to its absence may be charged all failure and unreliable results.

In the douche apparatus here illustrated, three instruments of precision are utilized, the second clock, noting duration, the pressure gauge noting force of impact, and the thermometer, noting temperature.

Upon the judgment of the physician depends the selection of the case. That the profession in this country has not yet appropriated a therapeutic agent of such great value as water may probably be accounted for by the fact that the empirics, having energetically espoused it, have brought it into disrepute.

This brief descriptive article is intended by the author to recall the fact that water if an orthodox remedy, upon which Hippocrates wrote an able treatise (he brought out the fact, too little regarded in this enlightened time even, that cold water excites and stimulates, while warm water soothes and depresses), and which enjoys the earnest advocacy of clinicians like Ziemssen, Semmola, Erb and Charcot.

ACROMEGALY—PARALYSIS AGITANS.[1]

By Simon Baruch, M.D., Physician to the Manhattan General Hospital, Juvenile Asylum, and Montefiore Home for Chronic Invalids, New York.

Acromegaly.—Thirty-five cases only of this singular affection having been published, its rarity warrants the brief history and illustration of a classical case in these pages, in order that they may serve as aids in diagnosis.

A. H., æt. 36, of good family history, was in good health until nine years ago. Menstruation began at 15 and ceased at 18. She married at 20. Shortly afterward she noticed that her feet were sometimes swollen. One of her fingers increased so much that she was compelled to remove a ring from it. Three years later she noticed an elongation of the lower jaw beyond the upper. At the same time her friends noticed a general increase of her size.

After a wagon-ride she suffered pains in back and extremities, and could not walk well. These pains have continued during the past six years, especially in the head, which prevented her doing any work, or reading.

Status presens. There is an enlargement of the head, hands, and feet. All the facial and cranial bones are thickened; the line of the lower teeth extends beyond the upper; the lower jaw is much enlarged.

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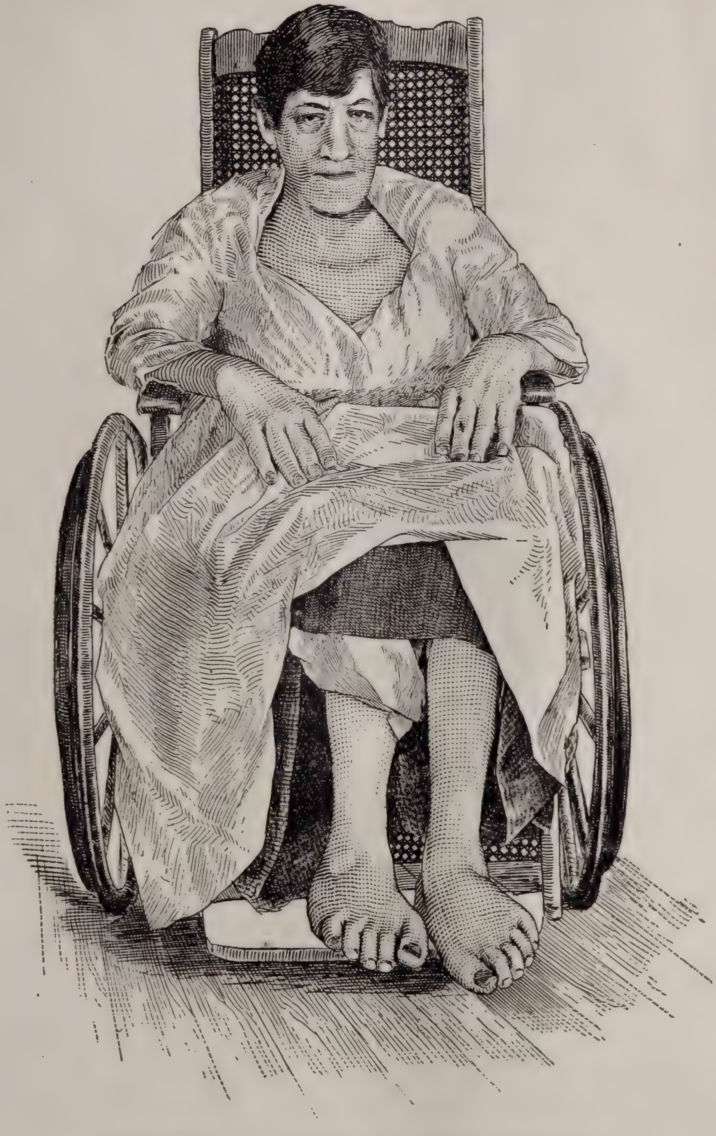
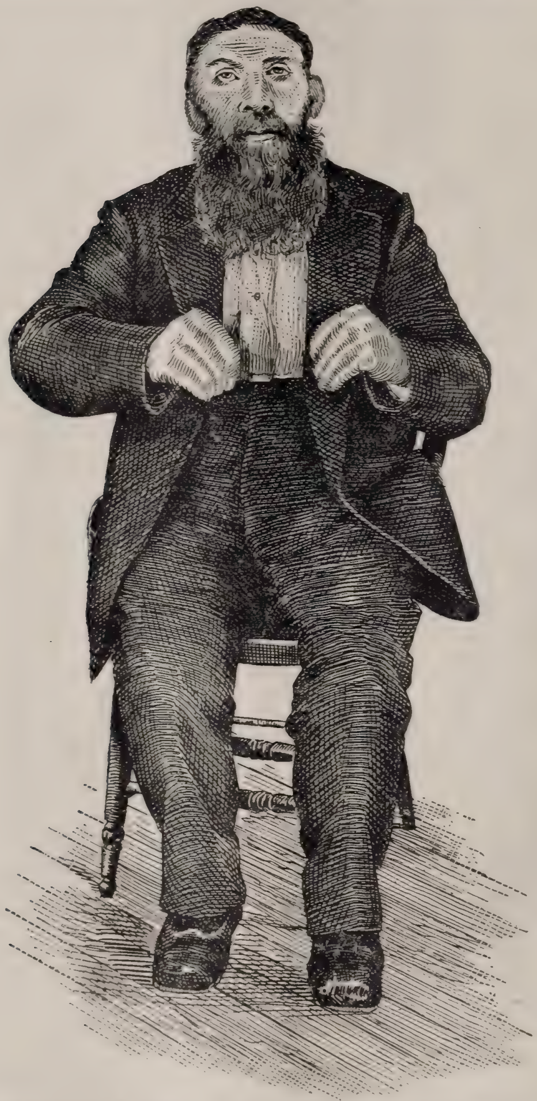


Acromegaly.—(Case Dr. Simon Baruch.)

The tongue is hypertrophied, the skin over the face is thickened and has an œdematous appearance. She cannot keep her head erect—assumes a kyphotic position. The chest is greatly enlarged, due to thickening and enlargement of the sternum, clavicular and costal, as shown in the drawing. All the bones of the hands and feet are enlarged in every direction. The long bones also are somewhat increased and thickened, chiefly at the epiphysis. The muscles are atrophied from inactivity.



Paralysis Agitans.—(Case Dr. Simon Baruch.)

The pelvis is enlarged and scoliotic. Pressure upon the enlarged bones is painful. Patient very anæmic; complains of headache, vertigo, anorexia.

She has grown larger during her two and a half years' residence at the Montefiore Home; her general condition has improved, headaches have ceased, pains diminished; she is more intelligent, and passes her time in reading and needlework. As Virchow, Marie, Fraentzel and others have noticed, there is no dulness on percussion over the region of the thyroid gland in this case. The great prominence of the lower portion of the occipital bone, referred to as a novel manifestation by Schultze, had been previously noticed in this case in the able and most complete account published in the *New Yorker Medicinische Monatschrift*, May, 1889, by Dr. I. Adler. This excellent paper will amply repay perusal.

The salient features of the case are so well represented by the artist that it is equivalent to standing in its presence.

Paralysis Agitans. M. B., æt. 65, merchant, German, has a sister suffering from the same malady. No other nervous diseases in the family. He did not walk until four years of age. Claims to have been cured of intermittent fever by a fortune-teller, after all other remedies failed; had typhoid fever in 1876. At the age of 55 a friend called his attention to the peculiar position in which he held his left arm. He then noticed twitching of the middle toes of the left foot; one year later tremor in left leg, under excitement.

The extremities are so contracted that they can be approximated only with difficulty. Knee jerk is prevented by contraction of the joint. Tremor and contractions are more marked on the left side. He complains of pain and burning sensations in the extremities, often preventing sleep; cannot stand long in one position; must be fed, on account of tremor of hands.

The drawing illustrates graphically the peculiar attitude of these patients, and thus furnishes a valuable aid to diagnosis. For the history of these cases I am indebted to Dr. Max Rosenthal, late Senior Resident of the Montefiore Home for Chronic Invalids.

THE PATHOLOGY OF PNEUMONIA.

The pathology of pneumonia is one of the *quæstiones vexatiæ* of medicine. The disease has so many points of resemblance, on the one hand, to the specific fevers, and, on the other, to acute pulmonary affections, that the determination of its true pathological relations is a most difficult and complex problem. The question at issue becomes still more interesting when we remember that not only has pneumonia been a puzzle to the pathologist, but its treatment has been one of the great controversies of therapeutics. We naturally turn for light on these subjects to such a work as the exhaustive "Treatise on Diseases of the Lungs and Pleura," by the late Dr. Wilson Fox. "Two opposite theories," the author informs us, "have been advanced regarding the origin of pneumonia, both of which are supported by certain facts and opposed by others—(1) That pneumonia is a 'specific' fever, of which the disease in the lungs is only a local effect, and (2) that it is a purely local disease, of which the pyrexial and other phenomena observed are only the immediate consequences." In favor of the first view are the following facts: (*a*) negatively, the absence in a large proportion of cases of any discoverable cause likely to excite inflammation of the lungs, and *b* positively, the suddenness of the onset of the disease, its well-defined course, its occasional epidemic and contagious character, the presence of bacteria in the blood, and the frequent appearance of a cutaneous affection (herpes), possibly analogous to the rush of the exanthemata. A point corroborative of the above is the well known want of synchronism between the clinical progress of the case and the pulmonary condition. Thus, it is very common for the temperature to fall to normal and all the symptoms to abate, while the physical signs of pulmonary consolidation remain practically unchanged. Less frequently, but still not very rarely, the consolidation may show signs of resolution before there has been any abatement of the clinical symptoms.

The above evidence seems strong, and if we confined our attention to it we might conclude with some confidence that pneumonia must take its place among the "specific" diseases. But, unfortunately, there are some points of great weight that tell against this view. Thus pneumonia is only very exceptionally epidemic, and its contagiousness, although held by some good observers, is still doubtful. Again, the influence of season is very apparent, the preponderance of pneumonia falling in the months from January to May. It might be urged, in reply to this, that just as pneumonia shows a preference for the late winter and early spring, so typhoid fever inclines to occur as an autumnal disease. But it seems impossible to resist the evidence that the frequency of pneumonia is much influenced not only by season, but by weather, cold winds and sudden changes of temperature predisposing to it. In this regard pneumonia shows an affinity with pulmonary disease and other affections that are admittedly due to "chill." Then, again, while there is often a want of synchronism between the physical signs and the symptoms of pneumonia, we have to recognize, on the other hand, such a fact as the greatly increased mortality which attends bilateral as opposed to unilateral pneumonia.

In so far as treatment throws any light on this subject there are facts on both sides. The general stimulant treatment of pneumonia, now almost universally adopted, hardly differs essentially from the treatment of the continued fevers, and is obviously adapted rather to the theory that pneumonia is a "specific" disease than to the belief that it is a local inflammation. On the other hand, local applications to the chest in the form of poultices, icebags, etc., have enjoyed much favor, and have been believed by some authorities to influence the progress of the disease. Stimulating expectorants, again, generally play a considerable part in the therapeutics of pneumonia. Summing up the subject, William Fox wrote: "The theory of a 'specific' cause can scarcely be maintained for pneumonia in the same sense as that in which the term is employed in the contagious pyrexial diseases. The causes of pneumonia are manifold, and the disease may originate under such diverse conditions that it seems impossible to attribute it to any single blood poison. On the other hand, the most probable hypothesis to explain its origin is that of an altered composition of, or the existence of some morbid material in the blood, which from its special qualities may affect a particular organ, or, as is more probable, may, under local predisposing causes, excite inflammation in that part of the system which in any given individual is the most liable to suffer, as a *locus minoris resistentiæ*." We have no knowledge of the nature of the changes in the blood that predispose to pneumonia. The excess of fibrine that has been described has been shown by Virchow to be the consequence rather than the cause of the pulmonary inflammation. In some cases, no doubt, pneumonia is due to septicæmia, but this is not at all probable of the typical acute disease.

It is rather a curious circumstance that while theoretical considerations and clinical evidence seem at present inadequate to fix definitely the pathological relations of pneumonia, the response of pathology and bacteriology is also somewhat equivocal. It is true that the researches of the bacteriologist of late years have considerably advanced our knowledge of this part of the subject. From them we learn that the microbe most constantly present in pneumonic exudation, and in that of the inflammatory affections with which pneumonia is often complicated, is the diplococcus discovered by Fraenkel and Weichselbaum; whereas Friedländer's bacillus, like some other microbes occasionally found in pneumonia, is of exceptional occurrence. Nor must the remarkable investigation of the two Klemperers upon the toxines of the first-named organism be lost sight of, as affording additional proof of the specificity of the disease. Nevertheless, when all these contributions to knowledge are collated, it would still seem that much remains to be done before we are in a position to conclude that bacteriology has said its last word regarding pneumonia.

According to Wilson Fox, "the disorder which, on a lesser scale, presents the greatest analogy with acute pneumonia is perhaps acute tonsillitis, where we have the same short initial stage, a similar intensity of rigor and prostration, a similar sudden invasion of pyrexia, and a similar rapid decline of this before the local inflammation has shown any signs of abatement. In tonsillitis, also, we have frequently an equal difficulty with pneumonia, in verifying a distinct cause, and a certain amount of evidence at least exists in the case of the so-called 'hospital sore throat,' that it may also be produced by other poisons than those originating within the system from the impeded exercise of the function of the skin." It will thus be seen that the pathology of pneumonia remains a a question *sub judice*, but that the best authorities incline more and more to the specific theory of its origin.—*The Lancet.*

RECENT ADVANCES IN THE STUDY OF INEBRIETY.[1]

By J. E. Usher, M.D., F.R.G.S., of Melbourne, Australia.

Considerable interest has been manifested on the part of the medical profession and the world in general in the treatment of alcoholism during the last eighteen months. Until very recently drunkenness was looked upon as a species of moral depravity only; now, however, thanks to the observations and experiments of physicians interested in this subject and insanity, it has become fairly well established that every man or woman who drinks must not at all times be held responsible for his or her conduct. Drunkenness may be set down as presenting some forms of disease with perhaps a slight basis of vice.

Intoxication is no new habit or disease, allusion being made to the same in the book of Genesis. Although only lately, some forms of drunkenness have been admitted to be due to constitutional disease. One of the earliest writers, Herodotus, who wrote nearly four centuries before Christ, mentions that both mind and body were temporarily, if not permanently, diseased following the use of alcohol; Aristotle also laid stress upon the fact that drinking meant madness.

In the *Talmud* we find many instructive legends and traditions of a highly educating nature, and the dangers apt to arise from the inordinate uses of alcohol are figuratively given in an argument supposed to be carried on between Noah and the Devil.

Buddha laid down a special law to the Orientalists to "Obey the truth and walk steadily in the path of purity, and drink not of liquors that disturb the reason." In the Koran, Mohammed strictly enjoins the non-use of beverages containing alcohol. So much is this impressed upon the Mohammedan that I found considerable difficulty in treating patients during a short stay in Sindh, India, some years ago.

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[1] Read before the Society for the Study of Inebriety, London, Eng.

Ine, king of the Saxons of the West, in the year 694, found mead (a kind of ale) so important a luxury that his subjects were called upon to provide him with a certain quantity yearly. An amusing illustration is related of what took place in the reign of Edgar in 958. He really was the first temperance advocate, and as a beginning he directed that guests should be restricted in the quantity of their potations.

And in Dorsetshire, until a little while back, a vessel was on view, the sides of which were marked off with pegs at regular distances from one another. No one was allowed to drink more than was to be found between the pegs. The Archbishop of Canterbury of the same reign aided the king in every way. If we may believe the history of that period, the laws introduced against drinking beyond the pegs had to do mainly with the habits of the rural clergy.

Legislative reform of a prohibitive nature really came to light about the Magna Charta period (1216). From what can be gathered, the governors of the nation were at their wits' end in dealing with the liquor question. In the year 1552, in the reign of Edward VI., licenses were first granted by the magistrates. From that period to the present time parliamentary interference has been invoked at intervals to create a better state of things.

In this regard I would venture to offer some remarks on the different forms of repression that have been and are still being used in different countries to curtail the licensing system. In Canada, Iowa, and Ohio, complete prohibition exists. The high licensing act has proved efficient in its provisions, but even in this the success expected has been very much minimized. In some parts of America and in Australia good results have been obtained under the local option enactment. As the position I am speaking from to-day is one purely of a medical character, I may be pardoned for not offering suggestions on the political aspect of this matter.

A new danger in our islands has arisen: I speak of the ether habit. In Ireland it has attained such proportions, in the North chiefly, that the large quantity of 20,000 gallons of ether, good, bad and indifferent, are consumed yearly by the people. Some of the victims there produce a state of unconsciousness or intoxication half a dozen times daily.

Indeed, a man may become intoxicated for twopence. Insanity frequently follows this habit.

In a recent brochure on drunkenness, we are told with all seriousness that the results obtained in the retreats in England are not sufficiently satisfactory, and recommending the patients to be sent to Continental countries for treatment. This is a hazardous indictment. In the United States, where legal forms sustain the position of such institutions, the leading specialists in that country very rarely have to call in their aid, and it must be allowed that America is in the front rank in the arrangements made for dealing with this admittedly newly allowed disease. I do not agree with the opinion expressed by some physicians that no good is to be obtained out of inebriate homes where full power does not exist to enforce compulsory restraint. That buildings under government auspices, having for their object the treating of alcoholic diseases, are urgently required, will not be gainsaid. However, in cases where the position of the patient is such that poverty or want of sufficient money is not a bar, there is no valid reason why, the friends being agreeable, he should not be treated by competent men specializing upon this subject. Germany has made a wondrous move in this direction, and some sections of the bill recently brought forward in the Reichstag are exceedingly drastic. It is proposed to treat the disease as one of criminality, and also to give power to the judiciary to keep alcoholists under lock and key till satisfied of their cure. The profession will hardly submit to such an interference; at present the matter is *sub judice.* Some idea of the amount of money realized from the manufacture of wines and spirituous liquors, and the taxes upon the same, may be gathered from the fact that Russia produces an income of nearly 250,000,000 roubles per annum from alcohol. New York City receives for licenses the sum of $1,469,130 yearly. France manufactures one and one-half billions of dollars' worth of wines and brandies yearly, equaling £300,000,000. In one year the police in St. Petersburg arrested 47,000 persons for drunkenness. The consumption of ardent spirits in that country reaches to more than 34,875,000 gallons yearly, or for each inhabitant about thirty-seven gallons. The average for every individual in the empire represents a consumption of nine gallons per annum. In the western provinces of Russia an average of ten bars or drink stations for every four villages exists. Dr. Portougaloff in a recent letter tells me that he had occasion not long ago to visit several large villages in the famine-stricken districts of Samara, and found that in some of them (where for more than three years no public house had been), during the last months two or even three gin shops had been opened in each village. This has been owing to the fact that the authorities found it impossible to put a stop to the secret and illegal sale of vodka except by granting licenses to some of the villagers, so attached is the Russian "moujik" to this drink. Vodka is a kind of gin distilled from rye, and containing about 40 per cent. of alcohol, and is looked upon as the national drink.

The Forms of Disease.—I would now proceed to the consideration of the recognized forms of alcoholic inebriety.

First, we have that of heredity, the most fearful of all. That this form is a disease, pure and simple, no authority on mental diseases will deny.

It presents a complexity of mental aberrations and changes so puzzling that it can be easily understood how difficult it must be at times for even an expert to give a final opinion where a person is the victim of this degeneration. The child of the alcoholist enters the world with a modified nervous organism ; and the liability to hereditary diseases, such as tuberculosis, cancer, gout and other well-known ailments, in the children of parents who have been alcoholic subjects, is exceedingly strong. This may extend through several generations. A startling example of this nature came before me recently in New York. A gentleman of high attainments, well cultured, of good social position and wealthy, consulted Dr. Gray, one of the leading psychological specialists, as to his recent and present crave for alcoholic stimulants. On going into his history it was found that his grandfather, up to the age of 40, had led a very regular life ; soon after he took to intoxicants, and in a year was dead. The patient's father, strange to relate, knowing the fate of his parent, avoided drink in every way, but upon reaching 40 years he fell a victim to alcoholism. The gentleman who applied to Dr. Gray had only just turned the fatal age of 40, and it was both Dr. Gray's and my own opinion that one of the most difficult cases had come forward for treatment.

During a visit to Washington in January, Dr. Hammond related an extraordinary case of hereditary transmission. I will give it in his own words as follows : "A gentleman informed me that his grandfather had become accustomed to wake up from sound sleep at twelve o'clock every night and drink a cup of tea, after which he would lie down and sleep quietly till morning. The father of my informant was a posthumous son, and his mother died in childbirth with him. He was English, and at an early age went to India with an uncle. One night when he was about twenty years of age, he awoke suddenly with an intense desire for a cup of tea. He endeavored to overcome the longing, but finally, being unable to sleep got up, and proceeding to an adjoining room made himself a cup of tea, and then going back to bed, soon fell asleep. He did not mention the circumstance at that time ; in fact, it made no strong impression on his mind ; but the next night the awaking, the desire, and the tea making were repeated. At breakfast the following morning he alluded to the fact that he had twice been obliged to rise in the middle of the night and make himself a cup of tea, and laughingly suggested that perhaps it would be as well for him in future to have the materials in his bedroom. His uncle listened attentively, and when the recital was finished, said:

"Yes, have everything ready, for you will want your tea every night; your father took it at midnight for over twenty years, and you are like him in everything."

"The uncle was right; the midnight tea drinking became a settled habit. Several years afterward the gentleman returned to England and there married. Of this marriage a son—my informant—was born, and six years subsequently the father died. The boy was sent to school till he was sixteen years old, when he was sent to Amsterdam as a clerk in the counting-house of his mother's brother, a banker of that city. He was kept pretty actively at work, and one night in particular did not get to bed till after twelve o'clock. Just as he was about to lie down, the idea struck him that a cup of tea would be a good thing. All the servants had retired; so the only thing to do was to make it himself. He did so, and then went to bed. The next night he again had his tea, and after that took it regularly, waking from sleep punctually for that purpose at twelve o'clock. Up to that time he had never been a tea drinker, though he had occasionally tasted tea. Writing home to his mother, he informed her that he had taken to the custom of drinking tea, but had acquired the habit of taking it at a very inconvenient hour—twelve o'clock at night. She replied telling him that he had come honestly by his liking, for his father and grandfather had had exactly the same habit. Previous to the reception of this letter he had never heard of the peculiarity of his father and grandfather."

Dr. Darwin was one of the first to observe characteristics such as the above. Another form of drink heredity is the amount of idiocy, spoken of in some of the American statistics, traceable to the same. At the least it is believed that over thirty-three and a half per cent. of the insane cases arise from imbibition of alcohol. Many allow even a greater percentage that this. In Russia the percentage of lunacy brought about by intoxication rises to seventy and eighty per cent. Here in England, from the reports of a parliamentary committee on lunacy issued a number of years ago, we find that the percentage of lunatics from alcoholism in English asylums reached the enormous number of nearly fifty per cent. From forty-five to sixty per cent. of the imbeciles and other demented creatures have to thank their parents for their demoralized state. Speaking of the acquired form of alcoholism, it is hardly necessary to tell you here how it is brought about. I need only repeat that fashion, customs, medical prescription, injuries to the head, exhausting complaints, nervous debility, overwork, insufficient food, and innumerable like causes bring about an appetite which is hard to extinguish once having been established. In talking of the forms both by heredity and acquirement, we are apt to lose sight of another and less dangerous, which might well be denominated a case of *ceder à la force majeure.* I speak of the indiscriminate administration to little children of any beverage the parents may be partaking at the time. Yet these are the very people who would condemn an exhibition on the part of some poor unfortunate who, through no fault of his or her own, might be victims to legacies in the shape of transmitted alcoholism.

At the present time there are nearly one hundred asylums and homes in the world for the treatment of this disease. It may be said that heredity is the causation of 60 per cent. of the cases. Injuries and disease may account for another twenty per cent.

Pathology.—I would now crave your kind consideration and attention for a few minutes, in order to lay before you the results of a series of microscopical experiments conducted with the view of arriving at a more defined knowledge and more intimate acquaintance with the pathological conditions existing in chronic alcoholism. For some time it has occurred to me that the pathology in the disease we are discussing is not as well understood as the morbid changes existing in other diseases. Further, beyond a knowledge of the alterations that take place in certain organs, in the blood vessels, and to some extent in the nervous system, it has never been pointed out, to my knowledge, that degenerative changes which are very slightly understood may operate on the blood in such a way as to defy all possible chance of the body being properly nourished. My labors have been devoted to noting the blood changes.

In the blood of several patients that I examined suffering from alcoholism of a chronic character, the red blood corpuscles were found to be very much changed and altered in their appearance. In reality, in some very bad subjects the disintegration constituted so great a change that the individuality of the cells had become nearly extinguished and lost. The chief pathological difference was to be found in a contraction of some of the red cells with the exudation of the coloring matter, added to considerable lessening of their natural size and an almost entire loss of their normal outline. What takes place apparently is a partial coagulation of the albumen of the serum and corpuscles. A convex appearance is presented, or, to indicate it more correctly, a series of indentations appear to have supplanted the bi-concave or normal appearance of the red cells. The stroma of the corpuscles appears to undergo great contraction.

The leucocytes or white blood corpuscles exhibit a striking contrast to the red, but singular to relate the same utter disorganization does not appear to exist. The white cells it would seem present changes in the nuclei which evidently are contracted to a surprising degree. Apart from this the cells do not evince any lessening in size, but suggest a swollen or enlarged state. The size of the red cell is amazingly diminished, with perhaps an increase in one of its diameters. These pathological appearances were very well marked in several chronic alcoholists, and in a much less degree, extremely so, in men whose drinking might be called moderate. The non-drinkers whose blood I examined did not present like changes.

What are we to infer from all this, and what line of treatment should be followed, admitting the correctness of the hypotheses here advanced as to the pathological changes present in the blood? Where alcohol has been absorbed in an inordinate quantity producing blood changes which affect the nutrition and function of the nervous matter which governs the system, what other morbid states are to be sought after or expected?

Can there be changes of a fungoid or germ-like character in the vital parts of which the blood is composed? It is well known to all physicians how altered in structure become the organs of the body, due to fibroid changes which are rarely if ever corrected. In the conduct of a number of post-mortems during the last four years a peculiar condition was at times found in the brain matter, leading to the supposition that a suppurative or other alteration had taken place. The softening may have been due to one of several conditions. Microscopically examined, some of the nerves, apart from evidencing changes in their size and form, appeared to present a peculiar irregularity of surface, looking somewhat like ciliary processes, and which at the time for want of a better name and more perfect knowledge were classed as partaking of the nature of a fungus. Accepting the possibility of such having existed, is it too much to believe that the intense craving, so prevalent in the accentuated forms of alcoholism, may not arise from the irritation, or partly so, of such formations as well as from the blood? A singular feature attendant upon many deaths from inebriety and insanity is the remarkable fact that on post-mortem examination no traces of disease are to be found, that is to say, no lesions or alterations of brain structure or of any of the organs are to be discovered.

Deep as have been the studies in pathology, there is a vast empire of discovery still to be conquered. (Spero meliora.)

It must be patent that the action of blood apparently so changed and altered in its vital constituents, should have an influence on the nervous matter in general, and the more delicate cells of the brain in particular, leading to the production and appearance of symptoms so marked in their character as to preclude the possibility of mistaking the existence of a mental change.

In this connection it is hardly necessary to point out, what is already well known, how intolerant of even a partial blood impurity the nervous organization is. As nearly 84 per cent. of the diet we ordinarily take is water, we are placed in the position of having to consider a very strong fact in the knowledge that water constitutes nearly seventy-five per cent. of the blood, and approximately equals three-fifths of the weight of the whole body. As alcoholists take very little water we cannot be surprised that the diet of the blood, a forced one too, becomes preëminently one of alcohol. The cry of the brain in answer to the general system for an increased and better supply of nervous force causes the central nervous system to call upon a fluid already impoverished and degenerate to keep up the quantum of that liquid which in fact is annihilating the body it is supplying.

Treatment.—In dealing with this section of the paper, I would primarily point out that there is little doubt whatever but that much care should be exercised in prescribing for patients suffering from alcoholism. I would refer to the desirability of using, in most cases, aqueous solutions and infusions of drugs, and not those which have been prepared with alcohol. This may be looked upon as an extreme argument, but there is little doubt that any drug or liquid which acts as a poison would, when exhibited in subjects predisposed to its action, be dangerous whether administered to them in small or large quantities. A new order of therapeutics appears to be coming into vogue, having for its basis the peculiar principle, that by the use or introduction of another drug, the action and desire for one to which a patient has become habituated may be checked, if not altogether entirely suspended. To this end some specialists are devoting their attention to the treatment of alcoholism by using opium, belladonna, cocaine, and other drugs of a similiar class to combat the disease. In innumerable instances the patient has gone from Scylla to Charybdis; in fact the morphine or cocaine habit has supplanted the alcoholic, and *vice versâ*.

There is little satisfaction in realizing that the more recent the case of alcoholism, as in cases of insanity, the greater is the chance of cure and the quicker is the same accomplished. Some attention has been called to a so-called cure used in Iowa. The alleged remedy was stated to contain gold, but on analysis none of this metal could be found. Several deaths have followed the treatment, and a large number of cases of insanity are reported as having resulted from the administration of the drugs used. This I investigated on the spot. Paralysis is not an uncommon sequence to the course of treatment. The cure, as it is advertised and termed, has been sold, like hosts of other nostrums, for nearly twelve years in the State of Illinois; latterly it has created quite a boom, having been taken up extensively by some of the Far West newspapers, but is now undergoing a decline owing to the fatalities following its use. It is said that $40,000 per annum is spent in advertising the "cure." Among the many treatments carried out, I would make mention of that of Dr. Jewell, of San Francisco, whose experience, extending over ten years, has been very considerable. In all he has superintended the treatment of over 17,000 cases. First of all he isolates the patient from alcohol, and then proceeds to the treatment by using strychnine, cinchona, acid phosphate and, when occasion requires, sedatives. Dr. Day, of Boston, the oldest specialist practising in America, adopts a tonic treatment with isolation. As a hypnotic he prefers paraldehyde to others of that class. In Russia the remedy employed, and this chiefly by Dr. Portougaloff, who has during the past five years treated over 500 cases, resolves itself into the use of nitrate of strychnine. He claims to have obtained very good results. Dr. Hammond, of Washington, U. S. A., treats the general state, adopting tonics or sedatives where demanded, and also favors the use of baths, electricity, and massage. In Australia no special formulæ are used, but tonic remedies are in vogue, and acute symptoms are attended to as they arise. Dr. Weir Mitchell, of Philadelphia, the noted specialist on nervous diseases, informed me that he always prepares his patients for treatment by first attending to the stomach, and imposing rest in bed for a few days. In nervous diseases he, at times, uses gold, and would use strychnine in cases of alcoholism. Hyoscine and sulphonal are adopted by him to procure sleep. Dr. Langden C. Gray, of New York, is against the immediate withdrawal of alcohol under any treatment. He finds quinine useful, and, as a sedative, bromide of potash. In India, at Bombay, strychnine has been in use some time and, it is claimed, successfully. Dr. Giacomini (an Italian) was one of the first to use strychnine in the form of injection for drink. In France, Drs. Dujardin Beaumetz and Lutton were among the earliest users or nitrate of strychnine. Dr. Dennison, of Colorado, uses gold, and has done so for some time. The leading surgeon in Chicago, Dr. Andrews, finds much success in the administration of gold, atropine, cinchona, flex, cocoa, and muriate of ammonia. He cuts off the liquor after a few days. Dr. J. C. Da Costa, of Philadelphia related to me how successful he had been in the exhibition of cocaine; he also prescribes strychnine and sulphonal, and insists upon isolating the patient.

Dr. Gray, of Laporte, Ind., a man standing very high as a specialist in the treatment of all forms of alcoholism, gives a mixture similar to that used by Dr. Andrews, of Chicago.

From the foregoing it will be noticed that many of the remedies are on the old lines, although at times the rationale of treatment, in some instances, is, to say the least, very strange. Many specialists still hold to the use of alcohol as a tonic and remedy in the earlier treatment; this is open to challenge, and for my part I prefer that patients should be deprived of such a remedy without delay. A line of treatment I would be inclined to suggest is one of isolation, for a period to be fixed; the use of special blood alteratives, to be followed or accompanied by nerve tonics, together with care in the selection of food.

Conclusion.—I regret that the time at my disposal this evening will not permit of my giving you the details of the treatment I follow, based upon the pathological deductions already presented. Before leaving Melbourne, a number of lawyers, civil servants, physicians, journalists and others were under treatment, and appeared when I left Australia to be well established in their habits of moderation regarding the use of drink. Very shortly I hope to be able to give, *in extenso*, the latest treatment and opinions upon alcoholism in all its forms.

That the domain of medicine has a new disease added to it is, without a doubt, fairly established in the differential diagnosis now made and adopted by experts in this form of nervous disintegration. Not for one moment, however, do I wish it to be understood that every man or woman who drinks is to be exonerated on the score of not being able to control what really in many instances amounts to a very serious moral obliquity.

Terrible and conclusive evidence is being amassed by observers in the treatment of inebriety that many of the victims enter this world with the nidus of disease latent in their organizations. Are these people to be treated in the same way as those whose surroundings are those of acquisition and habit, and who have become addicted to one or other of the poisonous methods with the intention of creating conditions imaginatively altered, only to find on the effects of the drug or liquor passing away that life is all too real for them? What is more natural than that the habit once having been established a recurrence is not difficult, where only moral force is used as a preventive.

As it is my present intention after having visited the Continent to elaborate the result of my investigations into book form, I shall conclude these remarks by expressing the hope that, apart from my own investigations and experiments, further advantages may be gained by an aggregation of all the treatments that have come to be known, allied to a more perfect knowledge of what is being done by some of the best minds in the profession, who are working at the present moment on a scourge which is responsible for the perversion of so many splendid intellects, the causation of most cases of insanity, and for the vicious propensities which are unfortunately so often found where the drink, morphine, or other narcotizing habit is established.

PHARMACY AND THERAPEUTICS.

New Methods of Obtaining Cocaine Anæsthesia.—Dr. Schleich (*La Sperimentale*, No. 3, 1892) reported a method of obtaining cocaine anæthesia painlessly. The method is as follows: The spot to be injected with the solution is first rendered anæsthetic by spraying with a solution of ether and petroleum. He uses as an anæsthetic a very weak solution of cocaine, two centigrammes in one hundred grammes of water, and this is quite sufficient, as only the parts infiltrated by the solution are incised. Anæthesia may also be obtained by injecting pure distilled water; this he calls anæsthesia by infiltration. Solutions of the bromide of potash, caffeine (2 per cent.) and morphine (1 : 1,000) also act as local anæsthetics, and may be substituted for the cocaine solution, which Schleich establishes at 1–5 : 100, or two centigrammes to one hundred grammes of water. After spraying, the point of the needle is introduced into the skin, but not below it. Injecting a few drops, a small cutaneous infiltration of the size of a shirt button is formed; then spray and inject again until the future line of incision is marked by a line of these little infiltrations, situated in the skin. A single Pravaz syringe will form from four to six. The same method may be employed to render anæsthetic the subcutaneous tissues, the muscles and periosteum. With this method the writer has performed sequestrotomies, herniotomies, amputations of the fingers, suturing of the patella, hydrocele operations, extirpations of tumors, nephrorrhaphies, and five laporotomies—in all 224 operations—without ever having recourse to chloroform or surpassing four centigrammes of cocaine. The small quantity of the drug employed insures against poisoning. The maximal dose may be fixed at five centigrammes. If then the symptoms of poisoning (excitation, loquacity, frequence of the pulse) appear, which he has not observed, one may substitute a solution of the bromide of potash, caffeine or morphine. He holds that, when possible one, should avoid chloroform, and only use it when this method is insufficient.

The last number of *La Semaine medicale* contains an article by Dr. Courtin, of Bordeaux, France, on a method of obtaining cocaine anæsthesia. The skin is first rendered insensible by a spray of some freezing mixture, an incision is made, and the tissues wet with tufts of cotton dipped in a solution of cocaine, 1 : 30. This method had also been used by an Italian writer in the management of wounds in order to ligate the vessels or suture, but although, in case of wound of the eyes, a 4 per cent. solution was used, only a diminution of the pain was obtained.

It is doubtful if Schleich's method will take the place of general anæsthesia.

Rhigolene, ether, chloroform, the hydride of amyl, etc., are recommended as local anæsthetics. The chloride of ethyl is also convenient, and gives good results. The following mixture is praised :

℞	Camphor,	aa	12 parts.
	Tinct. aconite,		
	Tinct. capsicum,		4 parts.
	Tinct. pyrethrum,	aa	2 parts.
	Essence of cloves,		
	Camphor,		

Dissolve the camphor in the chloroform, add the essence of cloves and the other ingredients.

The following mixtures are also recommended :

℞	Camphor	ʒ j.
	Ether	ʒ ij.

The ether may be replaced by chloroform.

℞	Chloral hydrate	ʒ ij.
	Camphor	ʒ ij.
	Sulphate of morphine	ʒ ss.
	Chloroform	ʒ j.

Either of these solutions, if painted on, will produce insensibility to the knife in superficial incisions.—*Lancet Clinic.*

CAMPHORIC ACID FOR THE NIGHT SWEATS OF PULMONARY TUBERCULOSIS.—James Wood, M.D., of Brooklyn, N. Y. (*Philadelphia Medical News*, March 12, 1892), says that probably there is nothing so unpleasant or aggravating in tuberculous patients as the profuse sweating that occurs either in the morning or during the entire night. The depression following it does not seem to be due to the sweating itself, but rather to the effects of a gradual increase in the quantity of carbonic acid gas in the blood, incident to the difficult interchange of gases, in consequence of the pulmonary affection. It is well known that in normal respiration the blood does not contain so continuously a high percentage of carbonic acid gas as will cause a less sensitive condition of the centres governing respiration. But in pulmonary tuberculosis, when the energy used in the daily exertions, from excessive coughing or other physical causes, more than exceeds the supply of energy and nutrition that can be furnished by the body, the respiratory centres are greatly depressed, and are not stimulated so quickly by a percentage of carbonic acid gas that would normally affect those centres. The centres presiding over the functions of the sweat-glands, not being affected by the physical causes, respond to the increased stimulation, and pour forth their secretions abundantly. The proper therapeutical mode of combating this functional perversion would seem to be to use such a drug as shall stimulate the respiratory centres, and thereby cause the elimination from the blood of more carbonic acid gas, and in this indirect manner act as an anhidrotic.

Camphoric acid seems to effect this object with less derangement and more satisfactory and lasting results than any other drug. This remedy is best given in doses of twenty grains, from four to six hours before the period of sweating is expected. The best method of administration is dry on the tongue, and washed down with a little water. The taste of the drug is not unpleasant, neither does it produce the gastric irritation so frequently experienced with many medicinal agents used under like conditions.—*Lancet Clinic.*

TREATMENT OF ACNE.—Dr. Wm. F. Waugh, in the *Times and Register*, summarizes his views on the treatment of acne as follows:

Correct any derangement of the general health which a thorough examination may disclose.

Regulate the general and personal hygiene.

The vigorous application of soft soap is indicated in all cases except the rare acute form; but especially for infiltration.

Nearly all authors recommend sulphur ointments for ordinary cases; mercurials for severe ones.

Except when clearly indicated, internal remedies are rarely of use.

The disease is singularly obstinate; hence, changes in the treatment adopted after mature reflection should not be made except for cause.

Ergot will cause the indurations to disappear quickly; but they will return when the drug is discontinued.

The prolonged use of strychnine and nitro-muriatic acid sometimes effects a cure.

℞	Strychninæ sulphat	gr. j.
	Acidi nitro-muriatici	f ʒ iij.
	Aquæ dest. q. s.	ad f ℥ v.

M. Sig.—A teaspoonful in water before each meal.

I have more than once failed to benefit a patient until he abstained from malt liquors.

THE BEST WAY TO GIVE COD-LIVER OIL IN TUBERCULOSIS.—According to Prof. Charteris, in the *London Lancet*, it should be prescribed in a teaspoonful dose at bedtime for three successive nights, then a dessertspoonful at the same time. On the sixth and seventh days it should be taken in a dessertspoonful dose after dinner and at bedtime, and afterward in a tablespoonful dose after each meal. If so prescribed it does not cause eructation or nausea, and the doses may be increased in accordance with the wishes of the patient until the end of the fifth week, when it should be stopped for a week, and resumed. With each dose of the oil five grains of hypophosphite of lime dissolved in a little hot water should be taken. Thus administered, these medicines notably increase the strength of the patient, and returning health is evidenced by increased weight.—*Med. Age.*

ACUTE ŒDEMA OF THE LUNGS.—Dr. A. A. Smith has found a most successful combination for the treatment of acute œdema of the lungs to be—strychnine $\frac{1}{50}$ grain and atropine $\frac{1}{100}$ grain hypodermically, and $\frac{1}{100}$ grain nitro-glycerine by the mouth at the same time; the strychnine and nitro-glycerine to be repeated every two hours till relief is afforded.—*Med. Record.*

CARE OF THE TEETH IN DIABETES.—Dr. Dujardin-Beaumetz says diabetics should care for their teeth and gums with the utmost attention. The following formula for a dentrifrice has given him the best results. It is to be diluted one-half at time of using, and should be used twice daily:

℞.	Acid. boric	25 grammes.
	Acid. phenic	1 gramme.
	Thymol	0.25 centigramme.
	Aquæ	1 litre.

To this is to be added:

℞.	Essence menth	gtt. x.
	Tinct. anisi	10 grammes.
	Cochineal	q. s. to color.
	Alcohol	100 grammes.

ACUTE RHEUMATIC ATTACKS.—Dr. William Henry Porter says (*Medical News*) that for acute rheumatic attacks nothing relieves so quickly and effectually as free mercurial purgation followed by salicylic acid or the salicylate of sodium. He prefers the following formula:

℞.	Salicylic acid	ʒ iij.
	Sodium bicarbonate	ʒ ij.
	Elixir of gaultheria	℥ i.
	Glycerin	℥ ss.
	Water sufficient to make	℥ iv.

M. Sig.—Dose one fluidrachm every hour.

The salicylates should be given hourly until their full effects are produced; then the interval between the doses should be lengthened from two to three or more hours, as may be required.—*St. Louis Med. and Surg. Journal.*

Treatment of Bubo.—Dr. J. Adolphus says that a coming bubo may be aborted by injecting three or four drops of pure carbolic acid, diluted with twice as much glycerin and half as much water, into the centre of the tumor. Plunge the cannula deep into the centre of the swelling, and inject slowly. If the tumor is large and the area of outlying œdema considerable, the injection should be made in three places. After injection, give the tumor a coating of flexible collodion; the collodion contracts and causes pressure on the tumor, which helps to promote absorption. Nine out of ten cases of bubo will be found to belong to the chancroidal class. Often the specific bubo remains unbroken for months, and then bursts. It is always a hard, solid body, well defined in outline, a point in differentiation from the simple kinds. The latter are amenable to the carbolic acid treatment, but the specific bubo is sullen and defiant, slow, remains hard, seldom softens. The simple kind often makes ugly sores which are hard to heal. He has found iodoform, boric acid, and balsam Peru the best local treatment, equal parts of each being used and the cavity being filled with the mixture. When the healing is slow he treats the sore with a solution of nitrate of silver, 60 grains to the fluid-ounce of water, a few drops of pure nitric acid, and 10 to 20 grains of nitrate of soda being added. Apply with a swab. This will frequently stimulate rapid granulations and cicatrization. A good local application to these sores is the fluid extracts of hydrastis, two or three times a day.—*Medical Age.*

Injections of Iodoform Oil in Tuberculosis of the Joints.—Dr. Adolph Ahrens has employed injections of a 20 per cent. emulsion of iodoform in olive oil, in sixty cases of tuberculosis of the joints, bones and soft parts, during the past two and a half years. The results of his experience are comprised in the following conclusions:

1. Iodoform-oil injections are entirely free from danger.

2. In most of the cases thus treated a decided improvement of the condition is noticed, which is evinced chiefly by the subsidence or diminution of the pains and the increased functional power.

3. In about forty per cent. of the cases observed, the improvement obtained approximated closely to a cure. Tubercular affections of the wrist and elbow joints are most favorably influenced by this treatment.

4. In commencing tuberculosis the prospects of a cure are most

favorable, and the coexistence of phthisis does not render the prognosis worse.

5. To prevent recurrences, a continuation of the injections at long intervals is indicated, even after a cure has been apparently effected.—*Beitr. z. Klin. Chirurg.—International Journal of Surgery.*

The Toxic Action of Impure Chloroform.—It has been an axiom for years that in the administration of chloroform for anæthesia the purified drug only should be employed. This has been founded in part upon observation and in part upon a knowledge of the irritative effects of some of the impurities in commercial chloroform. Professor Pictet's recent method of refining chloroform, mentioned in the *Journal* for December 12, give a very pure chloroform and an impure residue. Dr. René duBois-Reymond has recently published in the *British Medical Journal* the results of his experiments upon the physiological action of the residue as compared with that of the purified drug, cardiographic tracing being made of the hearts of frogs placed under covered dishes with both liquids, and manometric and respiratory tracing being made from rabbits inhaling the drugs through a tracheal cannula.

These experiments corroborated those already made on the action of chloroform in general, but on comparing the pure with the impure drug, no difference was found in the shape of the pulse waves or in the frequency of respiration. With the residue, at the close of the experiments, the pulse rate was higher than with pure chloroform; and when respiration stopped, the blood pressure was higher after inhaling the pure than the impure drug. Furthermore, the latter causes stoppage of respiration much more quickly than the former. Pure chloroform is much more volatile than the impure, and the purer the drug the less the quantity required for anæsthesia and the less risk of that respiratory failure which the Hyderabad Commission concluded was the cause of death in chloroform administration.—*N. Y. Med. Jour.*

Hepatic Colic.—Lemoine uses the following methods in the treatment of hepatic colic. If no vomiting is present, he has recourse to ethereal solutions or those containing chloroform, as follows:

℞ Syrupi acaciæ, f ℥ iv;
Æther, sulphur., f ʒ i.

Or,

℞ Chloroformi, ♏ xv;
Tincturæ myrrh, ♏ xv;
Mucilag. acaciæ, f ʒ ii;
Syrup, f ℥ iiiss.

A tablespoonful of either of these prescriptions every fifteen minutes.

If vomiting is a pressing symptom, it is to be arrested by giving small pieces of ice and sedative drinks along with very small quantities of cold beef-tea or milk. A turpentine stupe or other hot application may be applied to the abdomen, which should be covered by a rubber cloth to preserve the heat and moisture. Dry heat may be used in place of moist heat, if desired. Liniments are without effect, and mustard plasters may injure the skin, but prolonged and very hot baths are of service. Lemoine also uses the following suppositories:

℞ Extract. belladonnæ,
Extract. opii, āā gr. $\frac{1}{3}$;
Olei theobromæ ʒ iss;
Ft. in suppositorium No. 1.

Or,

℞ Extract. opii, gr. $\frac{1}{6}$;
Pulv. castor., gr. xv;
Ol. theobromæ, ʒ i.
Ft. in suppositorium No. 1.

—*Revue Therapeutique Medico Chirurgicale.*

PEROXIDE OF HYDROGEN IN SURGERY.

1. Hydrogen peroxide is a positive germicide and a possible stimulant to granulating tissues.

2. Owing to its especial property of eliminating oxygen, it is of unparalleled value in the distention of suppurating sinuses and cavities, especially in the mastoid region, or where it is almost impossible to reach unhealthy surfaces by other means.

3. The diluted solution is perfectly harmless and can with safety be used in any quantity.

4. The strong concentrated solution, syrupy in consistence, is a direct irritant to all tissues, and should never be used.

5. It possesses healing and cleansing qualities as well as those germicidal in nature.

6. When exposed to light it loses strength; care should therefore be exercised in keeping the bottles well stoppered with rubber corks, and in a cool, dry place.

7. Fibrin, cellular tissues and some metals instantly decompose it. In contact with sugar and starch it eliminates carbon dioxide (CO_2).

8. In washing suppurating surface, it should be used until oxidation ceases, thus showing a complete destruction of all existing purulent material.—*Dr. Engleton in "Notes on New Remedies."*

A Substitute for Keely's Cure for Drunkenness.—Whatever may be the opinion of the profession as to Keely's methods, there is no question that, with the aid of the newspaper press, public opinion still has faith in his statements. We learn that the secret of the *Chicago Tribune* ardent espousal of the Keely treatment is the ownership of stock in Keely's institution.

The essential features of Keely's treatment are not new—that the administration of certain drugs will create a positive distaste for alcohol has long been established, and is, within proper limits, and with no pretensions as to secrecy or mystery, the routine practice in treating the alcohol habit.

It behooves the profession, therefore, to counteract the effects of such methods as have been adopted by Keely by making known to these victims of the alcoholic habit that Keely is extorting money from patients under pretense of employing a method unknown to others.

Dr. J. L. Gray, in a lecture published in the *Journal of Materia Medica*, gives publicity to a method for the treatment of alcoholism, morphinism and the cocaine habit, which he believes to be identical with Keely's method, except that Keely includes in the formula he uses absinthe and aloes, in addition to the remedies employed by Dr. Gray.

Dr. Gray describes his method of treatment as follows:

The plan of treatment in vogue at the institution with which I am connected has been in operation over three years, and has produced in general much more favorable results than I could have ever hoped for under the older methods. When a patient is admitted to the sanitarium, after the preliminary examination, he is assigned a room and given a pint of good whiskey. His regular treatment is commenced by the administration of an active laxative, after which, at ten o'clock in the morning, at noon, at four, and at eight o'clock in the afternoon and evening, he receives a hypodermatic injection of chloride of gold and sodium and the nitrate of strychnia, one-tenth grain of the former and one-fortieth grain of the latter. Every two hours the patient also takes a teaspoonful of the following mixture:

℞ Chloride of gold and sodium, gr. xij.
Muriate of ammonia, gr. vj.
Nitrate of strychnia, gr. j.
Atropine gr. ¼.
Comp. fl. ext. cinchona, ℥ iij.
Fluid ext. coca, ℥ j.
Glycerin, ℥ j
Aquæ destillat, ℥ j.

He is allowed all the whiskey he can drink, and is urged to take it. Our treatment is kept up from three to six weeks, according to the character of the case. The theory upon which this treatment is based is that the inebriate is the victim of a distinct disease of that portion of the brain and central nervous system which is the seat of the will. The ability of this portion of the brain to properly exercise its functions is lessened, and as a natural consequence the ability of the individual to control his actions is not up to a normal condition.

From seventy-five to eighty per cent. of all the drunkards who come under our treatment are permanently cured. So far, therefore, as my own experience goes, I can say positively drinking is curable under intelligent medical treatment.—*Medical Age.*

THIOPHEN-IODIDE.—Dr. A. Hock has employed this preparation in Dittel's clinic in Vienna. It was applied either directly to wounds or in the following solution: Thiophen iodide 50.0, alcohol and sulphuric ether, of each 500.0, and glycerine 10.0. The remedy has a marked effect in arresting secretion in suppurating wounds, and is an excellent disinfectant and deodorizer.— *Wien. Medizin. Presse.*

ACUTE RHEUMATISM.—

℞ Euonymin, gr. $\frac{1}{4}$.
Podophyllin, gr. $\frac{1}{8}$.
Aloin, gr. $\frac{1}{8}$.
M. Ft. pil. No. 1. Sig.—Give night and morning as necessary.

Give alkalies till saliva is alkaline. Following is a useful combination:

℞ Lithii benzoatis, ʒ ss.
Sod. brom., } āā ʒ ij.
Potas. carb., }
Potas. acet., ℥ jss.
Sodii phos., ℥ ss.
Syr. zingib., } āā ad ℥ vj
Aq. menth. pip., }
M. Sig.—ʒ ij to ℥ ss in water, four to six hours after meals.

For antipyretics use antipyrin gr. x and digitalis gr. j, combined. For analgesics use phenacetin or antipyrin, and, if necessary, a combination of morphine, bromide, and chloral. Give alkaline mineral waters copiously. Give tonics, the following being excellent:

℞ Tr. ferri chlor., ʒ iv.
Tr. nux. vom.,
Ac. phos. dil., } āā ʒ ij.
Syr. aurantii cort., ℥ j.
Elix. Calisaya, q. s. ℥ ij.
M. Sig.—℥ j in water t. i. d. before meals.

If heart weakens, use following:

℞ Spts. ammon. aromat., ℥ iij.
Ammon. carb., ʒ j.
Tr. cardomom, ℥ j.
Tr. nux. vom., ʒ iij.
M.—Sig.—ʒ j t. i. d.

For topical application use:

℞ Tr. aconit. rad.,
Tr. arnica. } āā ℥ ss.
Chloroform, ℥ j.
Tr. saponis camph., ℥ ij.
M. Sig.—Apply locally.

Exclude nitrogenous foods. Salicylates, baths and massage are of doubtful value.—Dr. Satterlee, *Med. Age.*

Aristol for Venereal Ulcers is recommended by Dr. Guntz (*Memorab.*, Jan. 23, 1892) as a substitute for iodoform. Aristol should not be used in the form of an ointment, but should be applied directly to the wound. It is insoluble in water, but forms a tough brown pap with olive oil, which is, however, difficult of application. The undissolved powder itself is inert. Therefore the ulcer should be strewn with the powder, and a drop of olive oil be allowed to fall slowly from a glass rod upon it. Without waiting for the solution to be effected, the ulcer is promptly covered with some fine impermeable tissue, under which the solution takes place slowly. No cotton or charpie should be applied to the ulcer. If the secretions are very profuse, or if the ulcer is in an unfavorable location, this dressing must be secured by means of court-plaster. The application should be renewed twice daily, after careful removal of that previously applied. Its advantages are that it is painless, odorless and non-irritating, and that there are no inconveniences attaching to its use. Painful ulcers become painless, and previously bed-ridden patients become able to go about after its use. If, however, as is the case in corroding or torpid ulcers, the healing tendency is not sufficiently rapid, recourse to iodoform must be had. Although aristol is not curative in soft chancres, nevertheless, where it is substituted for iodoform, there is no danger that the lesions will assume a more serious character. This happens frequently when mercurial ointments are used. In hard chancres its action is better. But it is of especial value in secondary lesions, in ulcerating gummata, in tubercular syphilides, etc. Although, if continued long enough, this treatment will effect a cure, nevertheless it is hastened by the internal administration of antisyphilitics.

Burns.—The following is an excellent dressing for burns:

℞ Campho-Phenique........................... ℥ j
Lanolin,
Ung. aquæ rosæ.............................āā ℥ j.

M. Sig. Apply two or three times a day.—*Weekly Medical Review*, March 12, 1892.

Chronic Laryngytis.—R. S. H. Kennedy's Ext. Pinus
Canadensis (dark)..............................1 oz.
Drosera Rotund.................................½ oz.
Pure Glycerine.................................4 oz.

M. Sig.—Fifteen to 30 drops three or four times per day. Also, in nasal catarrh I think it almost a specific.

For Renal Hemorrhage.—The following is extremely useful:

℞ Ext. Ergotæ fl..................................2 oz.
Kennedy's Pinus Canadensis (dark)..............2 oz.

M. Sig.—One drachm every hour or two.

◆

SANITARY.

The Health Laws of the Bible and Jewish Longevity.—The *Asiatic Quartely Review* of January contains a report of a paper on the above subject, read before the Oriental Congress by Mr. Marcus N. Adler, M.A., F.S.S., Fellow of University College, London, in which are set forth in compact form some of the more important points of the Mosaic law which have a bearing on the health and longevity of the Jews. There are certain statements with which those who have studied the subject will not agree; but, on the whole, we find in this article a compact *rèsumè*, which, to most minds, will be perfectly convincing. It is difficult to understand why the quantity of gelatine that "pig meat" contains should be selected as one of the points to indicate its special unsuitability for food, "gelatine being a favorite nutriment of morbific bacilli"; most of those who have attempted to cultivate morbific bacilli in "pure" gelatine find that it is a very bad medium. It requires to be specially prepared and diluted before it is of much value. The part it plays in solid culture media is purely mechanical. Then, too, actinomycosis, which is here quoted, can scarcely be looked upon as a disease which leads to much infection among human beings. A very interesting part of the paper is a table drawn from the American returns, in which is given a comparison between the death rate among Jews and that among the general population from phthisis, diabetes, and diseases of the spinal cord, and also of the number of the insane among people similarly classified. The figures are as follows: From phthisis, the mortality among the Jews per 1,000 was—males 36.57, females 34.02; whilst among the general population it reached—males 108.79, females 146.12. From diabetes, Jews per 1000—males 19.85, females 19.59; and the general population—males 2.74, females, 1.21. From disease of the spinal cord, Jews per 1,000, males 9.40, females 6.18; general population, males 3.73, females 3.32. Although these diseases, spinal complaints and diabetes, have such an important influence on the mortality of the Jews, and are supposed to arise principally from nervous and mental strain (to which the exhausting business pursuits and head work of the Jews are supposed to subject them), the number of insane amongst them is only 44.5 per 100,000 of population; whilst amongst the general population of the United States it is 336. Mr. Adler sums up that Jewish longevity, fertility, and immunity from certain diseases cannot be looked upon as specially racial; he considers that they are due to moral and religious influences and are the outcome of Jewish habit, education and environment; and he further maintains that these advantages will endure as long as such influences are permitted to operate, but that they must disappear, as to some extent they are disappearing, where the bonds of religion and traditional laws are relaxed.—*Lancet.*

Stop Spitting.—The modern gospel of prophylaxis teaches that phthisis can be abolished from the face of the earth if only people will stop spitting. Says Dr. T. M. Prudden:

"If the vile and increasing practice of well-nigh indiscriminate spitting goes on unchecked in nearly all assembling places and public conveyances; if the misguided women who trail their skirts through the unspeakable and infectious filth of the street are to be admitted uncleansed into houses and churches and theaters; if theaters and court-rooms and schoolhouses and cars are to remain the filthy lurking-places of contagia which their ill ventilation and their mostly ignorant and careless so-called cleaning necessarily entail; if in sleeping-cars and hotel bedrooms the well are to follow consumptives in their occupancy without warning, or even the poor show of official disinfection; if in ill-ventilated and ill-cared-for dwellings the well must breathe again and again the dust-borne seeds of tuberculosis; if no persistent warning is to be given to the ignorant of the dangers which lurk in uncleanliness—then our task will be most complex as well as difficult in limiting the contagiousness of tuberculosis."

Of course cleanliness and plenty of water are necessary; but, after all, it is the expectoration which carries the germ and promotes the spread of disease. Spitting, it seems, is not only a vile, but an increasing habit. This is an unfortunate social fact which reformers do not seem to have grasped, despite its noxiousness. Shall we not have to have a Society for the Prevention of Expectoration—except into sanitary spit-cups? If one could stop the spitting habit, prevent the spread of consumption, and finally stamp it out, he would be greater than a tariff reformer.—*Med. Record.*

TOBACCO SMOKING.—The *British Medical Journal* mentions an agitation in favor of the suppression of tobacco smoking, and predicts that the movement will write down the president of the Anti-Tobacco Society and his associates as a body of harmless fanatics. "Tobacco has taken its place as meeting a universal taste and conferring a "privilege appreciated by thousands, and they should address themselves to those excesses of smoking which are manifestly injurious."

[There is little prospect that a crusade against smoking and chewing will be successful, or even make an impression upon those addicted, but the passing generation has seen the habit of snuffing tobacco by the nose pass completely out of existence. The gold and silver snuff-boxes and fragrant tonkas, the social pinch at the street corners, in the parlor, anywhere, everywhere, the loud blast of the well-trained nose with thickened and engorged lining "tooted" in church, in public, in private, the nasal tone of voice, only remain in the memories of the boys of the 40s and thereabouts. Is it not possible that we may see as great a revolution in the coming generation?

Tobacco is a tremendous tax on this generation, taxing the pocket and the nervous system; taxing the patience of the abstainers in public places, and the patience of housekeepers. No one can say it does not very great evil, but few are willing to listen with patience to a recital of the objections against it.]—*N. Carolina Med. Jour.*

Syphilis and Cigars.—Dr. W. S. Gottheil, writing in the *New York Medical Journal*, gives some very disagreeable information as to the manner of finishing cigars, and of the dangers which may consequently beset the smoker. The suggestion that contagious disorders, and especially syphilis, may be transmitted by cigars is not new, but the piece of evidence brought forward by Dr. Gottheil is of a particularly circumstantial kind. During last January a pale, anæmic girl, aged 19, consulted him on account of a disorder which he had no hesitation in recognizing as a typical hardchancre upon the upper lip. A general macular syphiloderm was present on the face and body; there was a diffuse specific pharyngitis, marked adenopathy, and moist papules on the labia and in the vagina. On inquiry it was found that she was a cigar finisher, her work being to take the cigars from a machine, bite off the ends, and use her saliva for shaping the tips. She stated that a friend, a girl who finished cigars upon the machine next to hers, had a similar lump upon her lip three months before, and as they used the same cup to drink from at lunch, she thought she must have caught the disease from this friend. The friend, who was aged 18, was seen later, and stated that a pimple came on her lower lip on October 2d, and enlarged to the size of a nut. She gave a history of eruption, loss of hair, sore throat, rheumatic pains and rash, and when seen presented large mucous patches on the tongue. Neither girl would believe that her disease was contagious; both continued to work finishing off the ends of the cigars with saliva, because "it would take too long to use knife and paste." It appears to be useless to attempt to induce the workpeople to resort to more cleanly methods, but it is thought that the abuse might be checked by imposing a penalty on the employers who permit such a method to be used. It is, however, almost impossible to compel workpeople in any trade to employ methods which involve a little extra trouble, even for their own protection. The story is likely to spoil the flavor of a good many cigars for some time to come, even if it be true that the tobacco leaf and the tobacco juice in the mouth "render the contagious element innocuous."—*British Med. Jour.*

ABSTRACTS.

Cerebro-spinal Meningitis.—In the spring number of *Brain*, 1892, Trevelyan records thirteen cases of the non-epidemic disease with eleven necropsies. In no case was tubercle found after death, and in only one instance was there otorrhœa during life. The occasionally rapid course of the disease, and the ease with which it may be overlooked, are referred to. Under the morbid anatomy it is pointed out that the chief seat of the disease is in the subarachnoid tissue, and that the exudation is most plentiful in the dorsal and lumbar regions of the cord because this tissue is most abundant there, whereas there may be none in the cervical region. The character and extent of this exudation in cases which recover are discussed, and the importance of a more systematic examination of the cord dwelt upon. Of the thirteen cases, six were examples of the primary disease, two complicated acute pneumonia, one was associated with proliferative endocarditis, and in another case these three diseases existed together. The relationship of these diseases is then discussed, and the probability of the same *materies morbi* (as, for instance, the pneumococcus infection) being able to produce them is referred to. No bacteriological investigation was made in these cases. In a most rapidly fatal case (ix.) the disease supervened on diphtheria. The occurrence of cerebro-spinal meningitis after such infective diseases as enteric fever, measles, influenza, is next illustrated. In Case xii. profuse otorrhœa occurred in the course of the meningitis, and at the necropsy no bone disease was found. The possible spread of the inflammation from the meninges to the middle ear is then alluded to, and the mode of origin of meningitis secondary to ear disease without any bone affection touched upon. Cerebro-spinal meningitis after head injuries, but without fracture, is next referred to. Case xiii. was an example of the disease occurring after a comparatively trivial operation on the throat. Other such cases are cited, and an explanation of the connection, if any, between the events sought for.

Free Hydrochloric Acid in the Gastric Contents.—Rosenheim (*Deut. med. Woch.*, March 31, 1892) says that the quantitative estimation of free hydrochloric acid in the stomach contents has not become general. It has been sought to estimate the total acidity by neutralization with sodic hydrate ($\frac{1}{10}$ sol.), and then it was believed that if the phloroglucin-vanillin reaction was obtained the acidity was mostly due to free hydrochloric acid. Practically the amount of free hydrochloric acid may be estimated by adding $\frac{1}{10}$ per cent. solution of sodic hydrate until the phloroglucin reaction is no longer obtained. The author says that the test papers introduced by himself may be here used. Good papers are white and should not darken easily; they should be kept in a dark flask. The question still arises as to the value of the quantitative test, and as to whether the estimation of the total acidity would be sufficient in practice. In regard to the total amount of hydrochloric acid, combined and free, it has been found that it reaches its maximum in sixty minutes and declines after eighty minutes. The quantitative relations of free hydrochloric acid at the different periods of digestion are very little known. Hayem and Winter came to the conclusion that, under ordinary conditions, the free uncombined hydrochloric acid is less important in comparison with the amount combined with albuminous bodies. The author has conducted experiments on seven healthy individuals, the amount of the free and combined hydrochloric acid being estimated singly and collectively, and he has constructed representative curves; all these curves sink at the end of digestion. The maximum in the curve of total acidity varies in point of time, and so does the rapidity of digestion. The curve of free hydrochloric acid is generally parallel to the former, but the maximum heights do not always exactly correspond. In different individuals the amounts both of free and total hydrochloric acid acidity vary considerably at the same stage of digestion. Examination is only of value if practised at the height of digestion.

DERMATITIS HERPETIFORMIS.—Some years ago Dühring, of Philadelphia, described cases of a disease which he believed had not been previously recognized, and to which he gave the name of dermatitis herpetiformis. The essential features of this disease of the skin are its chronic nature, its liability to relapses, and the polymorphous nature of the eruption, which may be erythematous, vascular, bullous, pustular, or papular, or multiform. The disease is not only chronic in its nature, but very refractory to treatment, from the fact that it assumes various types. Ittmann and Ledermann (*Archiv für Derm. und Syph.*, Heft 3, 1892), after describing three cases which occurred in the clinic of Professor Neisser, at Breslau, have sifted the published evidence regarding the affection, and confirm Dühring's conception of the disease. Like him, they separate it from impetigo herpetiformis and herpes gestationis and other bullous affections. Elliot (*Journal of Cut. and Gen. Urin. Diseases*, September, 1891) describes two well-marked cases in which the appearance of the eruption followed mental shock. In the first case, that of a woman, aged 55, he stated that two years previously a universal eruption of little blisters had appeared after a severe nervous shock from a death in her family. She had remained quite well for more than a year, when a similar eruption appeared, supposed to have been brought on by nervous shock produced by business reverses. In the second case, a man aged 53 received a severe mental shock from the death of an old friend. A few days later universal pruritus developed, most intense in the extremities, and at the end of two or three days erythematous patches, papules and vesicles began to appear. Elliott quotes eight other recorded cases in which this affection of the skin seems to have been produced by some severe mental emotion.

Bradycardia.—Opitz (*Centralbl. f. klin. Med.*, February, 1892) relates two exceptional cases. (1) A strong middle-aged man had acute pneumonia. The pulse rate was never more than 60 per minute during the attack, and it fell to 40 after it. It did not rise above this latter figure when the patient resumed his (laborious) occupation. There was no reason to suppose that there was any morbid cause for this slow cardiac action. (2) A woman aged 78 had 28 to 30 cardiac beats per minute during three months. Then the number fell to 24 to 20, when the patient complained of headache and giddiness. Six months later the pulse rate was 80, at which it remained. There was no appreciable alteration in the patient's condition to account for the change, and there were no signs of cardiac disease.

Oxaluria in Obesity.—Kisch (*Berl. klin Woch.*, April 11, 1892) says that the usual view that the excretion of oxalic acid is increased in this condition requires revision, and that to determine an excess of oxalic acid in the urine a quantitative examination is necessary, and not merely the presence of oxalate crystals. In nine cases of general lipomatosis, the amount of oxalic acid was estimated by Neubauer's method. In only one case was it increased, in four it was about the normal (20 milligrammes per litre), and in four it was diminished. In three cases lipogenous diabetes was present.

Resection of Lung for Pulmonary Gangrene.—Delagenière (*Sem. Méd.*, April 30, 1892) reports the following case: In a man aged 37, Aupradiaphragmatic abscess of the left lung was diagnosed. A curved incision, 40 centimetres long, was made over the ninth rib, and the ninth, eighth and seventh ribs were resected subperiosteally from the angle to the chondrocostal articulation. An incision 12 to 15 centimetres in length was next made through the pleura and a cavity opened which contained 500 grammes of pus and black foul-smelling detritus. This cavity was bounded below by the diaphragm and above by the lower lobe of the lung, which was gangrenous. The whole of the gangrenous tissue was cut away with scissors and forceps, a cavity large enough to admit a man's fist being left in the lower lobe of the lung. This cavity was carefully disinfected and one drain tube was placed in it and another in the pleural cavity. The wound in the pleura and that of the superficial parts were accurately closed, and the patient, whose condition was almost hopeless before the operation, recovered completely in six weeks. From this case and nineteen other recorded cases of pneumotomy for pulmonary gangrene, Delagenière draws the following conclusions: The operation has hitherto failed to give the desired results, because surgeons have been content merely to drain the gangrenous focus insead of extirpating it as completely as possible. The pleura should be opened very freely at the side by an **L**-shaped or **U**-shaped incision, or behind by a vertical one, according to circumstances. The operator should not hesitate to resect several ribs if necessary.

Excision of an Œsophageal Diverticulum.—Von Bergmann, of Berlin, reports (*Arch. f. klin. Chir.*, Bd. 43, Heft 1) the following case, which he believes to be the first in which extirpation of an œsophageal diverticulum has been performed. The patient was a woman aged 38, who for four years had suffered from disordered digestion. She vomited all food almost immediately after taking it, and could feel her neck become thicker as she swallowed. The sound passed sometimes with perfect ease, and at other times was arrested a little way down. As nutrition was seriously affected, and as the prognosis of such cases is bad (13 deaths in 21 cases), von Bergmann determined to attempt excision of the pouch. A long incision was made along the anterior border of the left sternomastoid. The deep cervical fascia was next divided, and a large goitre, which seriously hampered the operator, partly separated from its attachments and turned aside. The superior and inferior thyroid arteries and several veins were tied. The retro-œsophageal space was now exposed, and after a little search the diverticulum was found and freed from the surrounding tissue with the handle of the knife and forceps. It could then be seen hanging from the gullet like a small pear. It was removed, after which the mucous membrane of the œsophagus was brought together with stitches. The lower part of the operation wound was closed with sutures, the remaining portion being plugged with iodoform gauze. Although the patient had a drink immediately after the operation, the œsophageal wound healed by the sixth day. A small fistula which remained closed up after a few applications of the galvano-cautery. The wound in the neck then healed up by granulation without further trouble, and the patient was completely cured. As the pouch had a muscular covering on its outer surface, and as the patient had probably suffered from a cervical fistula in infancy, von Bergmann thinks the diverticulum was congenital in origin.

Resection and Suture of the Urethra.—Jouon, of Nantes (*Sem. Méd.*, May 4, 1892), reports a case of rupture of the urethra followed by urinary abscess and considerable induration of the tissues, which he treated successfully by resection and suture. The resected segment measured 10 millimetres at the upper and 18 millimetres at the lower part. The cut surfaces were brought together with nine fine catgut sutures. The immediate results of the operation were perfect, and Jouon thinks that the method should be applied to all undilatable strictures, whatever their origin. Quénu (*Sem. Méd.*, May 11, 1892) has resected the urethra in one case with indifferent success. The patient was a horseman who had sustained a traumatic rupture of his urethra, and during a period of ten years had undergone internal urethrotomy five times and dilatation on several occasions. The man was in a wretched state, the urine being purulent and ammoniacal, and the bladder the seat of infective lesions. Resection of the strictured portion of the urethra was performed, one centimetre and a-half being excised. A fistula was left, however, and the condition of the urine was but little improved, and Quénu thinks it probable that this was the cause of the failure of the operation. In any future similar case he proposes to prevent the infection of the operation wound by the urine by first making a provisional buttonhole opening in the membranous portion of the urethra. Desprès (*ibid.*) points out that resection of the urethra is not a new operation, having been practised by Bourguet, of Aix. He thinks suture unnecessary after resection, as healing takes place by granulation if a catheter is tied in. In this way he cured a patient with a strictured and fistulous urethra, two centimetres of which he resected. The fistula left by the operation closed spontaneously in a few months.

Cæsarean Section in Extremis and after Death.—Winckel (*Aerztliche Rundschau*, No. 5, 1892), discusses this question, which appears to have been taken into consideration by political and legislative authorities in Bavaria. These authorities have endeavored to ascertain if it be justifiable to enforce upon practitioners the performance of Cæsarean section on women who die during labor. After collecting evidence, Winckel finds that the chances of saving the child are considerable, the gloomy prognosis of Fehling and others being set aside by recent experience. The best results have been seen when the child has been extracted within ten minutes after the death of a previously healthy patient from flooding, or of a woman ill but very shortly before the moment of disease (from convulsions or pulmonary embolism, for example). In these cases the child was delivered at or very near term. Living children have, however, often been delivered by section and reared after the death of the mother from chronic cardiac or pulmonary disease. The longest period after death when Cæsarean section has saved the child is from twenty to thirty minutes (Pingler, Brotherston). Even when the fœtal heart sounds have become inaudible, rapid section has saved the child. The best success, as might be expected, has been obtained in hospitals, where instruments are always in readiness. Winckel recommends Runge's instructions to be followed when death during labor occurs in private practice. After all, Winckel remarks, these cases are still rare, and therefore laws cannot well be framed at present to bind practitioners. All cases should be duly reported, and registration authorities should tabulate them specially and with great care as to notification of the result. When the patient dies suddenly in the presence of the practitioner, or just before his arrival, Cæsarean section ought to be done at once with any instrument that is at hand. When the patient is sinking hopelessly from convulsions, apoplexy, etc., preparations should be made as complete as possible for the performance of Cæsarean section as soon as the maternal heart ceases to beat. There remain a grave class of cases where, after due consultation, it may be deemed justifiable to deliver the child by section, the patient being *in extremis*. Winckel refers to cases of severe dyspnœa, anasarca, etc. If the fœtal heart sounds can be heard, it may seem right to deliver the child by Cæsarean section, as the very slow death of the mother is more certainly fatal to the child than her sudden decease.

CÆSAREAN SECTION IN A CASE OF ABNORMALLY LONG CERVIX.—Aalsmeer, of Surinam (*Centralbl f. Gynäk.*, No. 1, 1892), is the first who has ever performed Cæsarean section in Surinam. The patient was a negress, aged 22. Her first labor was finished by perforation. She was admitted into hospital during her second labor, after the pains had continued for a whole day. It was found that the cervix was $6\frac{3}{5}$ inches long, the vaginal portion alone measuring $3\frac{1}{2}$ inches. The tissues were soft and the canal only admitted the finger with difficulty. The pelvis was flat and uniformly contracted; the conjugata inclinata measured $3\frac{7}{10}$ inches. Conservative Cæsarean section was performed. Hemorrhage was trifling; the temporary ligature was not needed. The patient recovered and the child survived.

INHALATION OF OXYGEN IN OBSTETRICS.—Rivière (*Nouv. Arch. de Obstét. et de Gynéc.*, April 25, 1892) has found as the result of much experience that inhalations of oxygen are of value under many circumstances both for mother and child. Thus inhalation is serviceable in counteracting the evil effects of chronic or acute thoracic diseases during pregnancy which so often cause abortion or premature delivery. In uncontrollable vomiting and anorexia, inhalations are also useful. After delivery inhalations superoxidize the blood, which appears to enable that fluid to resist sepsis. When a pregnant woman is ill or weak, inhalations always profit the fœtus, whose nutrition is thereby improved. Rivière goes so far as to contend that the method is of service in placental disease, or even in partial detachment of the placenta; it allows, he believes, more complete oxidation of the fœtal blood in the diminished area of sound placenta that remains. Altogether, however, he admits that inhalations are of more certain benefit for newborn children, whether they be emaciated from some cause which existed before birth or continue to be thin for some period after delivery, owing to malnutrition.

Prolapse of the Extremities in Head Presentations.—J. Kaeser (*Centralbl. f. Gynäk.*, No. 2, 1892), from a study of recorded cases, finds that prolapse of the extremities is far commoner in multiparæ than in primiparæ. The complication is favored by hydramnion, contracted pelvis with previous heavy labors and twin gestation, since in these conditions the inferior uterine segment does not press on the head with firmness sufficient to prevent prolapse of the extremities. Prolapse of the arms is less serious than prolapse of the legs, but the cord often comes down as well in these cases, and that condition is very grave for the child. When the membranes are yet entire, the obstetrician must wait till the os is completely dilated. Then the protruding extremity must be pushed up and the head brought well down by external pressure. After rupture of the membranes, manual reposition of the prolapsed member must be effected; if this prove unavailing and the head is movable, it will in many cases be advisable to turn. When the head is firm, reduction of the extremity should be cautiously attempted in the intervals between the pains. If this should fail, then, according to the nature of the case in other respects, natural evolution may be awaited, or the forceps or perforator may be required.

Diabetes and the Functions of the Female Organs.—Strojin owski (*Nouv. Arch. d'Obstet. té de Gynéc.*, March 1892, Supplement) or the basis of eleven cases under his own observation states that diabetes not only causes suppression of the catamenia, but also distinct atrophy of the uterus and ovaries

Bath Treatment of Eczema.—Lassar (*Wein. med. Woch.*, April 9, 1892) says the old idea that baths are contraindicated in inflammatory conditions of the skin is erroneous, as, on the contrary, they tend to keep down such affections, and scabs and crusts are removed. An example is seen in the progress of moist eczema in the skin folds of infants through want of using the bath. The bath possesses a resorptive power, allays both itching and pain, and should always be employed before the application of any medicament indicated for the skin affection.

HEREDITARY IMMUNITY AGAINST TETANUS.—Tizonni and Cattani (*Rif. Med.*, April 26, 1892) have found that animals which have been rendered immune to tetanus transmit this resistance to a great extent, if not absolutely, to their offspring. The female of a pair of rabbits, completely immunized against the toxine of tetanus, gave birth to a litter of four, three of which were inoculated when 9, 11 and 12 days old respectively with different doses of filtered tetanus culture, of which the smallest could produce fatal tetanus in a control animal of similar age. All three proved resistent. In the same way two young white rats, the offspring of immunized parents, were inoculated when a month old with doses which were rapidly fatal to controls. In this case resistance was also found to be complete. It remains now to be seen (1) whether further experiments are attended with the same results, and if so (2) whether it is necessary for both parents to be immune, and (3) the respective parts played by the male and female in the transmission of immunity. These questions the authors are now attempting to elucidate.

ETIOLOGY OF INFLUENZA.—A. Pfuhl (*Centralbl. f. Bakt.*, March 25, 1892) describes a bacillus found by him in the sputum in nine cases of influenza. The organism which lies within as well as between the pus cells is in the form of a fine short rod, and occurs in such vast numbers as to compel attention at once. Diminution in number was found to accompany subsidence of fever. The bacillus stained well with carbolic fuchsin, while with Gram's methed it remained almost completely unstained. Colonies with characteristic features were found on plate cultures of glycerine agar inoculated from sputum. The bacilli also grew well in broth, but indifferently on gelatine and potato. They could be cultivated to the eighth generation, provided inoculation of fresh tubes was not delayed beyond ten or twelve days. In plate cultures from the blood of one case a bacillus was found resembling that just described but even more delicate in form. This could not be cultivated beyond the second generation. Whether or not it was actually distinct from the bacillus first mentioned is uncertain. Pfeiffer was unable to cultivate the bacillus found by him in this disease beyond the second generation, but states that Kitasato later grew it to the fifth. Pfuhl considers these points in connection with his own experience, and suggests that possibly these observers were not dealing with one and the same organism. Rabbits were injected with organisms of both kinds; in either case refusal of food, tendency to mope in corners, slight rise of temperature, and signs of a general disturbance in health were noted, but these symptoms were more marked when the bacillus employed was the first mentioned.—*British Med. Journal.*

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BOOK REVIEWS.

Differentiation in Rheumatic Diseases (so-called). Based upon communications read before the Royal Medico-Chirurgical Association, 1892; Bristol Medico-Chirurgical Association, May 14th, 1890, and reprinted from The Lancet, October, 1891, by Hugh Lane, L.R.C.P., M.R.C.S., Surgeon to the Royal Mineral Water Hospital, Bath. J. & R. Churchill, 11 New Burlington street, London, 1892.

Rheumatism like malaria has long been a harbor of refuge for the uncertain or careless diagnostitian. Every pain or ache that cannot be readily accounted for is easily disposed of as rheumatism, muscular rheumatism, or chronic rheumatism. That a diagnosis of this character is due in many instances to a lack of careful study of the case is undoubted. A more accurate diagnosis might often have been made had due care been exercised. Yet, it must be admitted that until recently sufficiently careful studies in the differentiation of the diseases simulating rheumatism have not been made.

This little book is not a study of rheumatism, but rather a conscientious attempt at differentiation of the various diseases simulating rheumatism. The author's experience as physician at Bath, where these diseases are seen in every stage and phase, has been very great and has presented unsurpassed opportunities for study. He classifies these disorders as chronic rheumatism, chronic rheumatic arthritis, chronic rheumatoid arthritis, and gout in its irregular forms. By chronic rheumatism he means those cases in which the joints are painful but not swollen; or in which there is a neuralgia or even arthralgia associated with myalgia; or in which the various fasciæ are affected; or in which there is a general neuralgic condition supervening on an attack of acute rheumatism.

The differentiation is close and accurate, and the discussions upon treatment and the use of baths and mineral waters are satisfactory.

More space is given to gout than an American author would assign to it. But the American physician who ignores gout will make many serious errors in diagnosis and management. It is to be especially noticed that the author, while he uses lithia, iodides, cathartics and sedatives, believes that colchicum still holds its own among the anti-goutic remedies. The wine of colchicum with bicarbonate of potash, carbonate of magnesia, and iodide of potash is almost the only combination employed at the Bath hospital. It is certainly satisfactory in this day of new drugs and changing fashions to find one method of treatment still holding its ground.

THE ELECTRO-THERAPEUTICS OF GYNÆCOLOGY. By Augustine H. Goelet, M.D., Fellow of the New York Academy of Medicine, Editor of the Archives of Gynæcology, Obstetrics and Pædiatrics. With illustrations. Two volumes. Physician's Leisure Library. Single copies, 25 cents. Detroit: George S. Davis, 1892.

The dedication of this work to Apostoli and Gautier as well as the known opinions of the author, at once suggest the principles of treatment which will be advocated. Perusal of the text shows that while there are numerous modifications in methods and details the teachings of Apostoli have been very closely followed. The work is in fact an exposition of that author's system of electro-therapeutics.

The one great drawback to the practical use of electricity by the general practitioner is made clearly evident by this work, in which the whole of the first volume is devoted to a description of instruments and to electro-physics and electro-physiology. Electricity is an agent powerful for evil as well as for good. The average man understands this and is discouraged at the vast amount of study involved to enable him to apply it intelligently and effectively. The author has done an excellent work in reducing this difficulty to the minimum. His demonstrations and explanations are clear and concise and make the matter as easy as it is possible to make it. The second volume, which deals with the practical applications of electricity to the various gynæcological diseases is an excellent one. It is eminently practical and does not claim over much for electricity.

DISEASES OF THE NERVOUS SYSTEM. By Jerome K. Bauduy, M.D., LL.D., Professor of Diseases of the Mind and Nervous System, Missouri Medical College, St. Louis. Second edition. Philadelphia: J. B. Lippincott Company, 1892. Price $3.

The first edition of this work was issued sixteen years ago and was most favorably received by the profession. The present edition has been entirely rewritten and placed well on a line with contemporary neurology. It is an admirable critical analysis developed from the standpoint of a studious but practical and experienced physician. It is not burdened with anatomical detail nor useless discussions upon disputed functions, and is so concise as to contain all that is essential upon each subject in comparatively small space.

The title is somewhat misleading, for the volume is confined almost exclusively to diseases of the meninges and to insanity. We understand that there is to be a second volnme devoted to diseases of the brain and spinal cord and to functional and peripheral afflictions of the nervous system. The chapters devoted to meningitis in its various forms are good, the differential diagnosis being of especial merit. The work upon insanity while by no means exhaustive is eminently satisfactory. The elucidation of numerous abstruse and obscure points is excellent. The author's views upon emotional insanity are judicious and entirely reasonable. This, it is well known, is a subject upon which much discredit has been brought upon the profession because of the extreme and unreasonable views which have so often been promulgated. The author believes that to insist upon the existence of a delusion as a criterion of insanity would be to ignore some of the most serious and dangerous forms of mental disease—that a man utters himself by his acts as well as by his speech. He does not, however, attach such undue importance to a given act as to believe that any isolated act is in itself capable of proving insanity, no matter how great its enormity, lack of motive or other unaccountable features. The discussion regarding the care and management of the insane and the views expressed upon the comparative merits of home and asylum treatment are sensible and judicious.

ATOXA. CLINICAL LECTURES DELIVERED AT THE ARAPAHOE COUNTY HOSPITAL, Denver, Col. By J. T. Eskridge, M.D.

PNEUMONIA. By Boardman Reed, M. D.

INTESTINAL ANASTOMOSIS AND SUTURING. By Robert Abbe, M.D., N. Y.

GASTROSTOMY. By N. Senn, M.D., Ph.D., Chicago.

CASES OF GALL-BLADDER SURGERY. By Robert Abbe, M.D., N. Y.

THE REMOVAL OF ADENOID GROWTH FROM THE VAULT OF THE PHARYNX. By H. H. Butts, M.D.

MALADIES ASSOCIATED WITH AND DEPENDENT UPON AFFECTIONS OF THE TEETH. By Richard Grady, M.D., D.D.S., of Baltimore.

IDEALITY OF MEDICAL SCIENCE. By Maurice J. Burstein, A.M., M.D., N. Y.

EUROPHEN, ANTISYPHILITIC AND SUBSTITUTE FOR IODOFORM. W. H. Schieffelin & Co., N. Y.

EXPERT WITNESSES. By J. T. Eskridge, M.D., Denver, Col.

ANNOUNCEMENT OF THE UNIVERSITY OF COLORADO. 1892–93.

THE SUCCESSFUL TREATMENT OF CHRONIC DISEASES: A PLEA FOR THEIR MORE METHODICAL MANAGEMENT. By Simon Baruch, M.D.

PHENACETINE-BAYER, ANTIPYRETIC ANALGESIC OR ANODYNE. Wm. H. Schieffelin & Co., N. Y.

THE EFFECT OF FLUIDS ON THE STRENGTH OF CATGUT. By D. Braden Kyle, M.D.

HOME WARMING AND VENTILATION. The Herendeen Mfg. Co., Geneva, N. Y.

THE CLAIMS OF WATER AS A REMEDY; HYDROTHERAPY IN THE N. Y. ACADEMY OF MEDICINE.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

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CLINICAL RECORDS.

SURGICAL CLINIC AT HARLEM HOSPITAL.

By THOMAS H. MANLEY, M.D., New York, April 13th.

The first case, gentlemen, which we will deal with this afternoon is one of compound depressed fracture of the skull. Patient is forty years old, carpenter, enjoying good health. He says that when about to leave the building on which he was employed, he was struck on the head by a falling brick and knocked down. When he rose to his feet he found that his hair was wet with blood, and hence he came to the hospital for treatment. The house-surgeon, Dr. Elsing, on examining the head, found a depressed fracture. At no time since he entered the hospital has he had any signs of cerebral injury. There has been no somnolency, no paralysis, no convulsions and no headache. The pulse is normal. There is no elevation of temperature.

The area of fractured bone is about the size of a half-dollar piece, and is situated, as you see, rather to the right, but over the great longitudinal sinus, just a little posterior to the coronary suture.

Now, as to the question of treatment, what shall be done? Well, we all know that the most modern treatment for fracture of any of the accessible bones of the cranium is to immediately trephine, remove or raise the depressed, wash out the blood coagula if there are any present, drain and restore the disk of bone. This is all very well in theory, but in practice it is quite different. All cases of linear fracture with out marked displacement of the bone, where there are no symptoms indicating serious brain lesion, I leave alone, and have never had occasion to regret it. The dangers which may follow the opening the dura-mater, from hemorrhage, meningitis or cerebral hernia, must be all considered before we take the trephine. In this case it may be noted that there is considerable oozing through the wound, which, if it were not distinctly arterial in character, I would say came from a laceration of the longitudinal sinus. If this were the case, I should be very chary about attempting the displacement of this shattered, indented bone, for fear of an uncontrollable and mortal hemorrhage, and would do nothing unless such symptoms later developed as would give ample warrant for interference.

As to the operative technique in these cases, you will observe that I employ no trephine, but endeavor to get behind the fragment by the use of the chisel. I find this method of detachment much the easiest, simplest and safest. Now as I displace the fragments with a periosteal elevator, you notice that the dura-mater is uninjured and rises into position as the depressed bone is raised. The hemorrhage is from the very vascular, sub-occipital fascia and is easily controlled.

The next case is an old injury to the skull of a child five years old, who last August fell from the fourth story of a building, producing fracture of the cranium and considerable loss of the soft parts overlying it, so that when the wound healed there was such retraction of its edges as to leave a bare spot about the size of a half dollar, which you see, through want of an overlying nutrient medicine, and the irritating action of the atmosphere, is evidently necrotic on its exposed surface. He has been sent here to have this covered, as every expedient so far employed has failed.

We will commence by dissecting away the calloused edges, by freely detaching the scalp where it has contracted adhesions to the skull and then chisel away this necrosed layer until we come close on healthy or vascular surface, which will afford us a healthy substitution to implant the flap-slides upon. Now by moderate tension and incision into and through the scalp and occipito-frontalis, I am able to secure by a flap-sliding process such ample tegumentary material as will cover in the gap. We use no bichloride solution here, nor at any time on the integument, or the scalp of young children, as it gives rise to such a severe dermatitis. Our next and last case is one which I bring before you for the purpose of illustrating the different etiological factors in urinary obstruction in old men. You remember last week we relieved a case by prostatectomy; this one will not admit of that sort of treatment.

This man is 73 years of old. He had a sharp gonorrhea one year ago. Six months after this he commenced to have difficulty in urination, which has became progressively worse until now the smallest quantity is voided only with great pain. He has a double hernia, which has become quite unmanageable since this violent straining in urination began.

On examination I found no prostatic enlargement, but he has a tight stricture, which, for various reasons we will not dwell on now, I propose to treat by gradual dilatation. I may say that it is located in the deep urethra.

◆

MISCELLANEOUS.

An English View of American Surgery.—We have read with much interest the Surgical Impressions of Rutherford Morison, M.B., F.R.C.S., Eng. and Edin., published in the Edinburgh *Medical Journal* for March. These impressions seem to be the result of decidedly less prejudiced observation than is usually met with at the hands of foreigners. They convey the general idea that surgery in America stands well abreast of that of others countries, and we can find no word of condemnation of any of our methods. In one or two instances differences in practice are mentioned, but judicial decision for or against is avoided. Mr. Morison has seen a great deal during his limited stay in our country, and shows himself to be a man of great energy and perseverance, by the accomplishment of so much work in so short a time.

Mr. Morison gives a very entertaining account of his visits to American hospitals. He was surprised to learn that at the Roosevelt Hospital, New York, all strictures of the urethra are dealt with by internal urethrotomy, and speaks of the bougies used in the after treatment as terrible weapons. At Bellevue Hospital he witnessed a laparotomy for removal of the uterine appendages, and comments upon the skill displayed by the operator, but was somewhat startled to see "the unceremonious way in which this operation was performed." The impression conveyed to his mind was that "the operation was as exciting to the operator as the operation of trimming the nails is to an ordinary mortal." Judging from the number of cases he observed in which the appendix had been excised for perforating ulcers, he concludes that appendicitis is more common in America than in Europe. American surgeons, he says, claim that their hospitals and nurses are better than the English. The first claim he does not deny, but as regards the second he expresses his preference for the English nurse, although acknowledging that the system of training nurses in this country by lectures on subjects connected with their profession tends to increase their efficiency and could be profitably adopted in England. His concluding remarks will bear repetition:

"American much more resembles German than English surgery. Germans have an indescribable way of taking possession of an anæsthetized patient, giving the impression that he is entirely their own, and that they mean to do just what they like with him. German instruments are large, forceps like tongs, scissors like sheep shears, retractors like garden rakes. The German surgeon is seldom in doubt, and has an excellent embryological, bacteriological and pathological explanation of all his cases and results; if there is a mistake, something is to blame, not the surgeon. Then there are other German specialties, such as metal-handled knives, the invariable introduction of needles by a holder, the wearing of special operating apparel, and the selection of only such operations as can be performed with deliberation and in open daylight; all have more or less influenced American surgery. Results are, after all, the test, and on these a judgment must be formed, and from this standpoint my belief is that if English surgeons do not wish to be overtaken, they must put their best foot foremost."—*International Journal of Surgery.*

A Monument to the Late Dr. Samuel D. Gross.—At the last meeting of the American Surgical Association the following resolution was passed:

"*Resolved,* That the President be empowered to appoint a committee with authority to confer with the friends and admirers of the late Professor Samuel D. Gross, and with the profession at large, for the initiation of a movement, on the part of the Association, having for its object the erection of a monument to Dr. Gross in the city of Washington, D. C."

The committee subsequently appointed consists of Drs. William T. Briggs, Tennessee; Levi C. Lane, California; Solon Marks, Wisconsin; L. S. Pilcher, New York; A. Vanderveer, New York; James McCann, Pennsylvania; D. Hayes Agnew, Pennsylvania; J. Ewing Mears, Pennsylvania; S. H. Weeks, Maine; Hunter McGuire, Virginia; L. McLane Tiffany, Maryland; N. P. Dandridge, Ohio; H. H. Mudd, Missouri; J. Collins Warren, Massachusetts; B. A. Watson, New Jersey; D. W. Yandell, Kentucky; N. Senn, Illinois; Charles B. Nancrede, Michigan; W. H. Carmalt, Connecticut.

The chairman, Dr. J. R. Weist, has issued this circular:

"It is not the purpose of the American Surgical Association to claim the honor of erecting this monument to the memory of one of its most distinguished Fellows; but rather is its intention to initiate a movement in which the entire American profession should feel an equal interest; because Dr. Gross was of no exclusive faction, but a leading member of the whole profession.

"Hence it is, that each member of the committee is instructed to appoint sub-committees in his own State, irrespective of fellowship in this or any other association, which sub-committees will aid him in the collection of contributions to the general fund. Any contributions may be sent to Dr. John B. Roberts, 1627 Walnut street, Philadelphia. In the event of a failure to collect a sum sufficient to complete the monument, the contributions will all be returned to the subscribers."

Professor Gross was one of the most conspicuous surgeons America has ever produced, and perhaps no man in his time added so much to the glory of American surgery or the honor of American medicine. No one better deserved the monument proposed, and we trust that the effort to secure it will be successful. Bearing in mind, however, the failure of the attempt to secure a monument for Dr. Rush, we fear that the gentlemen in charge of the matter will have to work very energetically and skillfully. It will not come, experience shows, simply by general appeals, but by personal solicitation.

An Obstetrical Bundle.—This bundle I have found very useful. I have such a bundle prepared for every obstetric case, and its cost, seventy-five cents, is more than made up by the saving of time and subsequent visits. It contains the following:

1. One square yard of rubber cloth to be placed under the patient's hips and thighs—rubber side up, of course.
2. One square yard of canton flannel to be placed on top of the rubber, between it and the patient's body. In this way I make sure of having the bed protected and kept clean, and an aseptic environment, and the rubber can be quickly arranged to carry off the fluids into a suitable receptacle in case of operative procedures.
3. A number of pieces of cheese cloth to use as small towels, and also, when dampened with bichloride solution, as pads for the vulva.
4. A new and clean nail brush for each case. These brushes cost three cents, and hence one can afford a new one each time.
5. Safety pins.
6. A narrow bobbin, consisting of three strands, for ligating the umbilical cord.
7. An obstetrical eye bandage. This consists of a strip of cheese cloth, the two edges of which are rolled in and then doubled over a second time. While waiting for the pulsations of the cord to cease I wipe out the baby's eyes, and wrap this bandage around the head and eyes, and pin it. When this is not done the child often rubs its dirty fingers into the eyes before the attendants have had time to wash the child. Since I have adopted this plan I have never had any cases of ophthalmia neonatorum.

8. A small wooden vial containing tablets of bichloride of mercury. I prefer these small ones to the larger size, as they are just sufficient for each dressing without splitting the tablet.—G. E. ABBOTT, M.D., in *Post-Graduate.*

THE VALUE AND APPLICATION OF THE CYSTOSCOPE.—Meyer (*New York Medical Journal*) comes to the following conclusions as to the value and application of the cystoscope:

1. In all obscure reno-bladder diseases cystoscopy has to be practised—if necessary, repeatedly—before operative interference for diagnostic purposes is resorted to.

2. There are a number of causes which make cystoscopy impracticable.

3. Cystoscopy is an easy and harmless examination, but its successful employment requires experience.

4. It should be performed as a *dernier ressort*, after all other well-known means for making a diagnosis have been exhausted.

5. If properly applied, cystoscopy will generally clear up an obscure disease of the bladder.

6. In most cases we can determine, with the help of electric illumination of the bladder, whether we have to deal with a disease of the bladder or of the kidneys.

7. We can thus find out whether there are two working kidneys, also whether only one of the two kidneys is diseased, or both.

8. We shall most probably soon be able, perhaps in the greatest majority of cases, after sufficient practical experience and with the help of proper cystoscopic instruments designed for this purpose, to catheterize the ureters, and thus gather, in a bloodless manner, the urine from each kidney separately.

9. We can thus make out, in certain cases, by observing *the character* of the jets of urine, especially by *timing their frequency and duration* at the urethral orifices, whether the other kidney is doing the work of one which is diseased.

10. These facts will tend to make superfluous, in the majority of cases at least, a preliminary suprapubic or perineal incision for diagnostic purposes, as well as a nephrotomy performed for determining the action of the other (not diseased) kidney. They greatly widen and strengthen our means for determining the indication and prognosis of nephrectomy.

11. With the aid of Nitze's newest instrument, the operating cystoscope, we may look forward to being able to carry on intravesical treatment under the direct guidance of our eyes.

COURSE OF CHRONIC NEPHRITIS.—Dr. F. Delafield (*Amer. Jour. Med. Science*) says:

There is hardly any limit to the variety of the disease, but the most constant symptoms are anemia, dropsy, and albumen in the urine.

1. There are cases in which the symptoms are nearly continuous, the patients get steadily worse and die within one or two years. The anemia, the dropsy, and the albumen are constantly present, and the patients die with dropsy or with chronic uremia.

2. There are cases in which the anemia, the dropsy, and the dyspnea come on in attacks which last for weeks or months. Between the attacks the patients are comparatively well, often able to work, although the urine always contains albumen.

3. There are cases in which a number of years before death the patient has an attack of dropsy, etc., from which he apparently recovers and goes on able to work, but with urine of low specific gravity, which sometimes contains albumen. After an interval of many years comes the fatal attack with all the characteristic symptoms.

4. There are cases which for years have no symptoms but pallor of the skin and urine of low specific gravity containing albumen. These patients often for a long time feel so well that they cannot understand that they have a serious disease.

5. There are cases in which the first symptom is the attack of spasmodic dyspnea, the patients otherwise feeling well. It may be months or years before the other symptoms are developed.

There may be a history of chronic endocarditis lasting for years before the renal symptoms are developed.

7. There are cases which apparently recover from the disease.

The *prognosis* is bad, but life may be prolonged for many years with but few symptoms, and recovery seems to be possible.

Treatment.—Acute congestion of the kidneys can be relieved by the application of heat to the surface of the body.

Chronic congestion is best managed by the drugs which stimulate the heart and dilate the arteries.

We evidently have no means at our command by which we can influence acute degeneration of the renal epithelium; fortunately the great majority of the cases of acute degeneration are not serious.

Chronic degeneration also seems to be a condition which we are unable to treat.

In acute exudative and in acute diffuse nephritis the main indications for treatment are to diminish the severity of the nephritis and to regulate the circulation. To diminish the severity of the nephritis we employ cups over the lumbar region, heat over the lumbar region or over the entire body, and the internal use of calomel, sulphate of magnesia, opium, aconite, or digitalis.

The disturbances of the circulation are largely the causes of the cerebral symptoms and of the dropsy. With a laboring heart and contracted arteries we employ the drugs which dilate the arteries—chloral hydrate, opium, nitrate of amyl, and nitro-glycerin—or we diminish the quantity of the blood by venesection, sweating or purging. With a feeble heart and relaxed arteries we use the cardiac stimulants.

In chronic nephritis climate and mode of life constitute the important parts of the treatment; it is doubtful if drugs exert any effect on the nephritis. A warm, dry climate and an out-of-door life are of the greatest importance. Medical treatment can, however, be employed with advantage for the relief of the anemia, the dropsy, and the disturbances of circulation.

GOLDEN RULES OF SURGICAL PRACTICE.—Never try fluctuation *across* a limb, always *along* it.

Never forget that:

1. Abscesses near a large joint often communicate with the joint.
2. Abscesses near a large artery sometimes communicate with the artery.
3. Abdominal wall abscesses sometimes communicate with the gut.

Never forget that *early* openings are imperative in abscesses situated—

1. In the neighborhood of joints.
2. In the abdominal wall.
3. In the neck, under the deep fascia.
4. In the palm of the hand.
5. Beneath periosteum.
6. About the rectum, prostate and urethra.

Remember the frequency with which hæmatoma and traumatic aneurism have been mistaken for abscess, and incised; and remember, also, that in extravasation below the gluteal fascia there is rarely any sign of bruise or injury to the skin. Never incise such without auscultation or exploratory puncture.

Never plunge; never squeeze in opening abscesses. Do not forget that your incision should radiate—

1. In abscesses pointing near the nipple.
2. In abscesses near the anus.
3. In scarifying the chemosis of the cornea. And that your incision should be longitudinal—

1. In the hand.

2. In the urethra.
3. In the scalp.

Do not forget that incisions in the neck and face should run parallel with the wrinkles and folds.

Do not be afraid of hurting the lacteal tubes in mammary abscess. More harm is done to the gland by the enlargement of the walls of the abscess than by a free incision.

Never make a palmar incision, except in the middle of the lower third and in the axial line of the fingers, or at the sides of the palm.

Do not open an abscess anywhere near a large artery without first using a stethoscope, and then only by Hilton's method (*i.e.*, director and dressing forceps).

Never, under any circumstances, use for exploratory puncture that surgical abomination a grooved needle, for it will allow contamination of all the tissues through which it brings the fluids (Thornton).

In opening a deep abscess in the lumbar region without the projection of an abscess, do not forget to cut down opposite a transverse process, and not between them, for fear of wounding a lumbar artery.

Aneurism.—Never attempt to cure an aneurism by the formation of a thrombus if the patient has any septic condition (such as an abscess sore, suppurating otitis), for such may induce yellow softening of the clot.

Artery-bleeding. Always tie both ends of a divided artery in a wound.

Bladder and Urethra.—Never neglect to pass your hand over the patient's belly in typhoid, or any fever, injury or fracture of the spine, compression, etc.; for the bladder may be atonic and injuriously distended without distress.

Never use force in passing a catheter in fractured spine, because of the *insensitiveness* of the urethra.

Never pass a urethral instrument upon a man without having first passed one on yourself.

Never pass an instrument if your patient is suffering from an acute inflammation of the testicle unless you are relieving retention, or unless testitis occurs in a patient habitually using a catheter.

Do not permit yourself to talk glibly of "impassable" stricture. Such cases are rare. Patience and a little sweet-oil often carry an instrument through.

Never do an internal urethrotomy until you ascertain that your patient is free from undue erections, because of hæmorrhage. If the organ is irritable, exhibit bromide of potassium for a few days prior to the operation.

Never put on cantharides blister in nephritis because of absorption (use liq. ammon. fort.).

Do not forget that irritability of the bladder is often due to *renal irritation* and reflex actions.

Never inject more than four ounces at a time into the bladder, and that only with care.—*Times and Reg.*

HOW TO TREAT THOSE WHO ARE OVERCOME WITH GAS.—Several suggestions were made by different speakers at the recent meeting of the American Gas Light Association, at Toronto. The most practical were those quoted on the authority of a prominent physician, *Scientific American*, December 8, 1888.

1. Take the man at once into fresh air. *Don't* crowd around him.
2. Keep him on his back. *Don't* raise his head, or turn him on his side.
3. Loosen his clothing at his neck and waist.
4. Give a little brandy and water—not more than four tablespoonfuls of brandy in all. Give the ammonia mixture (one part aromatic mixture to sixteen parts of water) in small quantities at short intervals—a teaspoonful every two or three minutes.
5. Slap the face and chest with the wet end of a towel.
6. Apply warmth and friction if the body or limbs are cold.
7. If the breathing is feeble or irregular, artificial respiration should be used, and kept up until there is no doubt that it can no longer be of use.
8. Administer oxygen.—*College and Clinical Record.*

THE VISUAL FIELD IN EPILEPTICS AND MENTALLY DEFICIENT PATIENTS.—Lombroso (*Rec. d'ophthal.*, August, 1891) draws the following conclusions from his observations: 1. The visual field is remarkably limited in epileptics and idiots. 2. There is a constant irregularity at the periphery of the field, and the line of demarkation appears irregular and sinuous, sometimes forming actual peripheral scotomata of very inconstant location. 3. The field is more limited on the right side in the lower hemisphere, and on the left side in the upper hemisphere, thus forming a partial hemianopsia to the right below and to the left above. This he calls a partial heteronymous vertical hemianopsia. 4. In some cases there was an extreme limitation of the field, due to neuro-retinitis. 5. In all, the field for color was limited, its form following constantly that for white, but more or less regularly. 6. The field for blue and that for red cross at different peripherical points. 7. In almost all cases the ophthalmoscopic examination was negative. 8. The visual acuity was entirely independent of peripheral vision.—*N. Y. Med. Jour.*

Fracture of the Femur.—A satisfactory result has been obtained in the treatment of fracture of the shaft of the femur when—

1. Firm bony union exists.

2. The long axis of the lower fragment is either directly continuous with that of the upper fragment or the axes are on nearly parallel lines, thus preventing angular deformity.

3. The anterior surface of the lower fragment maintains nearly its normal relation to the plane of the upper fragment, thus preventing undue deviation of the foot from its normal position.

4. The length of the limb is either exactly equal to that of its fellow, or the degree of shortening falls within the limits found to exist in 90 per cent. of healthy limbs, viz., from one-eighth of an inch to one inch.

5. Lameness, if present, is not due to more than one inch of shortening.

6. The conditions attending the treatment prevent other results than those obtained.—*Medical News.*

Detachment of the Internal Epicondyle of the Humerus.—Mr. J. Hutchinson, F.R.C.S., in an exhaustive article on this subject (*Brit. Med. Jour.*, Jan. 16, 1892), summarizes as follows:

1. Detachment of the internal epicondyle of the humerus (as an epiphysis) is a very frequent injury in early life, and often accompanies dislocation of the elbow joint.

2. The detached fragment is displaced downward, and is rarely, if ever, reunited by bone.

3. In the treatment, passive motion should be commenced within three weeks, and should be persevered with until the joint regains its functions.

4. In several cases owing to pressure on the ulnar nerve, great limitation of movement, and trophic changes in the region supplied by that nerve, have resulted. In such cases it may ultimately be advisable to excise the detached piece of bone, but excision of the joint, which has been performed in one or two cases, is quite unjustifiable.—*Internat. Journal of Surg.*

The Pulse in Disease.—The following are the principal variations of the pulse:

Frequent Pulse—A pulse diminished in force, increased in frequency. A characteristic of debility.

Febrile Pulse—In fever, the rate of pulsation, and usually the force, is increased.

Feeble Pulse—A pulse that is readily extinguished by pressure with the finger. Indicative of great debility or exhaustion.

Thready Pulse—A pulse which gives the sensation beneath the finger of a vibrating thread. Present in cases of very great debility.

Slow Pulse—An unnaturally slow pulse occurs in cases of brain poisoning or apoplexy; it is present in compression of the brain from fracture, and in unconsciousness from opium or liquor.

Quick Pulse—An abrupt, jerking pulse, either frequent or moderate in rate of pulsation.

Hard Pulse—A pulse which seems to indent the finger. This symptom indicates great excitement of the circulation.

Intermittent Pulse—A pulse which now and then loses a beat. Indicative of either functional or organic disease of the heart.

Irregular Pulse—A pulse which is irregular in frequency and force. The irregularity may be only slight, or may be extreme. Is generally found in heart disease. Is very often the result of the use of tobacco and of strong tea and coffee.

Irritable Pulse--A pulse which is both frequent and hard.

Wiry Pulse—A pulse which gives the impression of a vibrating wire.—*Medical Brief.*

Alcoholism and Tuberculosis.—Dr. Hector W. G. Mackenzie, assistant physician to the Brompton Hospital for Consumptives, is of opinion that tuberculosis is much more common among those addicted to alcohol than is generally believed. He says that his experience among the out-patients at the Brompton Hospital is that a considerable portion of the phthisical—especially of the men—have been alcoholic, and that a history of alcoholism is a very common antecedent in those cases where there is no inherited susceptibility to tubercle. As regards women, it is impossible to say to what extent alcohol is responsible for the disease, it being very uncommon for a woman to own to alcoholic habits. He finds that in alcoholic cases the condition of the patient is generally worse than would be expected from the amount of disease revealed by physical examination. It is therefore specially important in such cases, when there are any chest symptoms, to examine the sputum for bacilli. By this means he has been able to make an early diagnosis of phthisis when the examination of the chest was negative. In alcoholic cases the progress of the disease, as a rule, is rapid, and the prognosis particularly unfavorable. Dr. Mackenzie does not offer an explanation why many drunkards develop phthisis. Our observation leads us to the conclusion that in the majority of cases of phthisis in inebriates the patients have endeavored to live on alcoholics in lieu of food. Every-one admits the importance of malnutrition as a factor in the causation of tuberculosis, and it is not a matter for surprise that drunkards who habitually neglect their food frequently die of phthisis.—*Hospital Gazette.*

Tuberculin a Test of Tuberculosis of Cattle.—In a herd of choice Jersey cattle kept near Philadelphia one cow died, and on examination she was found to have had tuberculosis. A veterinary surgeon examined the herd, but could detect no evidence of the disease in the other cattle. But, as an aid in diagnosis, he employed tuberculin, and found reaction in six cases. These animals were slaughtered, and all but one were found to be suffering from tuberculosis. The exceptional case was not fully determined. These six cattle were believed to be in perfect health by experts who subjected them to a thorough examination. This herd had been selected with the greatest care, many of the animals being imported. Every precaution had been taken to preserve the health of the stock and to increase their constitutional vigor. In-breeding has never been practised, and the greatest care has been taken to secure good ventilation, the choicest food, plenty of exercise, and pure water. Experts regularly examined the herd and everything pertaining to their health. In this instance the value of tuberculin in diagnosis seems to have been fully demonstrated. This experience has excited great interest among health officers, as it proves that there is a simple method of determining the condition of the herds which supply milk to cities. A question of importance has been raised in this connection—viz., as to the danger of using the milk of healthy cows that have been inoculated with tuberculin. The best authorities do not regard the milk in such cases as in the least affected.

MEDICAL NEWS AND NOTES.

Meeting of the American Medical Association.—The 43rd annual meeting of the American Medical Association was held in Detroit on June 7, 8, 9, and 10, under the presidency of Dr. Henry O. Marcy of Boston. Reports in the weekly journals have been so complete that we give but a brief résumé.

The address of the president upon Evolution in Medicine was a notable one. While it was held that associations must have their own inherent law or code of ethics, he inclined very strongly toward the side of liberality, holding that the difference between so-called schools of medicine should be between ignorance and knowledge alone. This means the abolition of *ism* and *pathy.* The formation of Homeopathy as a separate school was due largely to the unreasoning and dogmatic opposition of exaggerated conservatism. Where the doctrine has been given chance to prove its pretensions, as in Europe,it has made little or a no way among the people. He referred to the increase of specialism and the formation of special national societies. Under the leadership of a few master spirits, these societies have been united at special intervals to form the American Congress of Physicians and Surgeons. Of this the speaker approved, but the rank and file of the profession must continue to work in the field of general medicine, and of this vast army of workers the American Association must continue to be the exponent. There is no reason for jealousy between the great national societies; the field is large and there is ample work for all. He desired a national board of health, having at its head a " Secretary of Public Health," a member of the President's Cabinet. The committee on Secretary of Public Health reported progress. Its report was adopted and the committee continued for one year.

The unfortunate differences of opinion regarding the code were brought up by a question of membership of Dr. Potter, of New York, and for a time a serious quarrel seemed imminent. This was fortunately avoided by the appointment of a committee of five to meet with a like number from the Medical Society of the State of New York and the Medical Association of the same State, to adjudicate upon the standing of members of that society and report at the next annual meeting.

The address on surgery was delivered by Dr. John B. Hamilton, and the address on general medicine by Dr. Alfred L. Gihou, and were both worthy of their authors.

In the department of surgery appendicitis, hernia and abdominal surgery received a large share of attention. In medicine, the papers were well distributed among a large number of subjects. They were, on the whole, of more than usual merit. On the introduction of the new president, Dr. Hunter McGuire, to whom our cordial congratulations are tended, the Association adjourned to meet in Milwaukee in June, 1893.

THE sanctity of a jury-room appears to be so well guarded that, even in case of sudden sickness, a physician may not enter except after due process of law. In the Foss will case, tried recently in Boston, the jury were deliberating, when, late in the evening, one of them was suddenly attacked with what proved to be a stroke of apoplexy. The officer in charge notified the deputy sheriff, who, not having authority to let any one into the jury room, drove across the city and informed the sheriff, but even this official was not high enough to act, and another expedition started in search of the judge. As the latter happened to be at home, the requisite order was obtained to summon a doctor.—*Boston Medical and Surgical Journal.*

THE New York correspondent of the *Medical Age* gives the following table of the proportion of physicians to inhabitants in some of the cities of this country:

	Doctors.		Inhabitants.
New York City	1	to	750
St. Paul, Minn	1	to	800
Detroit, Mich	1	to	700
Boston, Mass	1	to	500
Chicago, Ill	1	to	600
Tallahassee, Fla	1	to	100
Washington, D. C	1	to	300
Bismarck, N. D	1	to	350
Hartford, Conn	1	to	400
Denver, Col	1	to	300
San Francisco, Cal	1	to	475
Little Rock, Ark	1	to	500
Prescott, Ariz	1	to	500
Montgomery, Ala	1	to	350

THE PHYSICIAN AND THE PAINTER.—The *New York Times* quotes the following from the *Pall Mall Gazette:*

Here is a good story of a doctor and a painter's wife. The doctor's name does not appear, but the painter was Meissonier. Mme. Meissonier sent for the family physician in a great hurry. He came, thinking some illness had overtaken the artist. But it was not the artist; it was only a lap-dog. He pocketed his pride and attended the patient, who soon recovered. At the end of the year the bill came in, but there was no item for attendance on a dog. Mme. Meissonier noticed the omission and told the doctor to charge. He would not charge; he said he could not charge; he was not a vet. He was very glad to be kind to the dog, etc. The lady insisted. "Well," said the doctor, "the hinges of my garden gate are rusty. Ask M. Meissonier to bring his brush and paint them for me."

ACCORDING to the *British Medical Journal* it has been discovered that the unpleasant or even poisonous symptoms which occasionally follow the local application of strong solutions of cocaine in the nasal and buccal cavities may be entirely prevented by combining the drug with resorcin.

The percentage of albumen in the urine, as reported by the different examiners, is often very confusing because there are two ways of estimating the amount, by weight and by volume; when no method of estimation is mentioned it is natural to suppose that the percentage referred to is by weight, as that is the only accurate method of measurement. As the blood contains but eight per cent. of albumen the urine cannot contain any more, and in fact the maximum that is found clinically is never over two and a half per cent. Such a urine would solidify on boiling, and those where fifty or twenty-five per cent. of albumen is reported would contain but one-half to one-quarter of one per cent. by weight. Dr. Tyson, in a letter on the subject to the *Medical News*, makes the excellent suggestion to use the term percentage with reference to the amount of albumen only when weight is meant, and for the estimate by volume to speak of one-quarter or one-half bulk of albumen as the case may be.—*N. W. Lancet.*

Folk Medicine in Russia.—*Slovo*, of Kiév, reports some curious instances of popular doctoring in South Russia. The rural dentist places his patient upon a little stool and examines him. If an upper tooth is to be pulled, he performs the operation with a simple pair of tongs like that used by cobblers; but if a lower tooth is to be extracted the operation is more complicated. The tooth is tied very skillfully with a violin string. The other end of the string is fastened to a hook in the ceiling. Then the stool is removed with a jerk from beneath the patient, who falls, his tooth remaining on the string, sometimes with the flesh around it. Intermittent fever is cured either by live frogs or by fright. When the sickness breaks out, the patient is made to carry about him as many live frogs as can be put in his clothes. If that treatment does not help the patient, his fellow villagers try to frighten him. The most popular method of doing that is known by the name of Likaniye. A crowd of men and women come into the house and raise a quarrel with the patient. They treat him to the loudest and most offensive terms of reproach. That naturally irritates him, and he answers in similar terms. The crowd takes offense at his rude expressions and resolves to lynch him. A rope is put around his neck and he is dragged about until he is insensible on account of fright.—*Med. Record.*

Dr. Alex. F. Lee, of Quincy, Ill., one of the most promising physicians of that place, became suddenly insane on the 7th inst., while operating on a man's neck for a tumor. He cut an artery and left his patient bleeding in the office while he walked in the streets and addressed a large crowd on his supposed wealth. He was to have been married the next day after the unfortunate occurrence.

Public Baths in Boston.—*The Boston Medical and Surgical Journal* states that a company, to be known as the Boston Bath-house Company, is soon to be incorporated to establish baths for the poor of Boston, following the steps of the chief European cities and the recently established People's Baths in New York. There is already a small establishment of this kind in Boston, where, during the first year, 3,000 men, women and children made use of it. It is hoped that after the baths are established they will be self-supporting. About $40,000 is needed for the establishment of the institution.

A National Sanitarium for Pulmonary Diseases.—A resolution has been introduced in the Senate, authorizing the President to appoint a committee of three persons, two of whom shall be physicians, whose duty it shall be to select a site for the establishment of a national sanitarium for the treatment of pulmonary diseases. This sanitarium must be located in one of the Territories of the United States, and upon unoccupied public lands, and the commission is to report within six months after its appointment.

Leprosy in Japan.—Another missionary who devoted himself to the succor of lepers has just completed his sacrifice by giving his life in their service. Father Testevuide, who may be called the Damien of Japan, established the first leper house in that country in 1886. At that time no provision whatever was made either by the government or the public for the care of lepers, and it was only by the most persevering efforts that the energetic priest was able to collect sufficient funds to build a leper house on Mount Fusi. This institution he personally managed till his death. His example has been fruitful, and now there are three asylums for the victims of leprosy in Japan, all apparently owing their existence to private charity.—*British Medical Journal.*

The London Lancet, after giving an account of the progress of the case of the late Duke of Clarence and Avondale, the son of the Prince of Wales, says that the details of the illness are thus in agreement with the now familiar facts, that when pneumonia supervenes upon influenza it is most insidious in its onset and very serious in its course. To some extent this is doubtless due to the effect which the influenza virus has in depressing the vital powers, and it sufficiently accounts for the exceptional fatality of pneumonia after influenza.—*N. W. Lancet.*

Dr. Austin Flint has been decorated by Venezuela and accorded the Order of the Liberator.

Dr. H. C. Wood, of Philadelphia, recently read a paper before the Pennsylvania Medical Society on Neuropathic Insanity, in which he took the ground that there may be insanity resulting from disease of the nerve structures; that it would be inhuman to punish such an affliction as a crime, and that the law should recognize many criminals, including drunkards, as neuropaths, who should not become the victims but the wards of the law.

Under the head of "Surgical Dexterity" an exchange prints the information that a certain surgeon perfromed a laparotomy, removing both ovaries, and completed the operation in six minutes. We fail to see just where the cause for commendation comes in, because we are of the opinion that the rapidity of the operation is not particularly in the interest of the patient. Rapid work is very desirable, but "working against time" is seldom to be commended.—*Lancet Clinic.*

Battle & Co. have just come off victorious in their suit against Finlay & Brunswick, who had been selling a liquid under the name of "Bromidia." The court decided that Battle & Co. had established property in the word "bromidia," and that the defendants must not only cease from using the word but must also pay to Battle & Co. all profits from their sales of the preparation.

Statistics show that 47,000,000 people die every year, and that to each and every one of these 47,000,000 must be allotted 2 x 6 feet of ground, making a total of nearly twenty-one square miles of the earth's surface that is each year taken up for burial purposes.

Negroes and Malaria.—It has been a tradition for centuries that the members of the black race were comparatively immune from malaria, but of late numerous practitioners in malarious regions within the tropics have adduced evidence against this theory. Dr. Jenkyns, of British Honduras, writes to the *British Medical Journal* of recent date that his experience of nine years in that colony has taught him that the negroes are very subject to intermittent fever, which is, however, very amenable to small doses of quinine, but that they also suffer occasionally from a bad type of remittent fever.—*Record.*

Cremation in Paris.—One hundred and fifty corpses were cremated in Paris in 1891, as against fifty the year before. The municipal authorities have recently decided that the bodies of those dying in the hospitals unclaimed by friends shall also be cremated; so the number of incinerations in 1892 may be expected to be very large.

M. Plante's new process of engraving on glass and crystal by electricity is found capable of producing results of marvelous delicacy. The plate to be engraved is covered with a concentrated solution of nitrate of potash and put in connection with one of the poles of the battery, the design being traced out with a fine platinum point connected to the other pole.

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EDITORIALS.

The Higher Aims of the Physician.—In this age of material progress, in which man has compelled into his service the forces of nature to a degree surpassing the boldest flights of the imagination of philosophers belonging to a former age, the tendency is to make the acquisition of wealth the main object of ambition. The rule laid down by Burns, in his well-known epistle to a young friend, which contains so much homely wisdom. "And gather gear by every wile that's justified by honor," is too often neglected, and consequently the welfare of the social fabric is seriously jeopardized by the fierce struggle for money-getting without regard to the means. Physicians have not escaped this infection, and nowadays it but too frequently happens that we hear the opinion expressed by medical men, as a proposition not to be disputed, that merit bears a direct ratio to the magnitude of the income. Young men just emancipated from the discipline of college and hospital, and eager to enter upon the battle of life, think of nothing and talk of nothing but fees. To become a successful practitioner by honest and persistent effort, to have a good standing in the community, and at the same time obtain a just remuneration for his professional work is certainly a proper object of ambition of every man who undertakes the arduous studies of the practice of medicine. But let not this be the main motive of action. It is a part, but only a small part of professional success. As Sir Benjamin Brodie remarks, in an admirable introductory lecture delivered many years ago at St. George's Hospital: "If, indeed, money were the only object of life; if to enjoy the respect of others and the approbation of your own conscience; to feel that you are doing some good in the world, and that your names will be held in esteem when you are gone out of it; if these things were to form no part of your ambition, then, indeed, you might possibly have your ambition gratified by pursuing a different course from that which I have pointed out. You might be unscrupulous in your promises; undertaking to heal the incurable; making much of trifling complaints for your own profit; claiming credit where none belongs to you; and you might try to advance yourself by what is often called a knowledge of mankind or a knowledge of human nature." This is all indisputably true, the more sordid a man's views, the lower his aims, the more will his actions correspond with the governing motive. He, however, who cultivates medicine in the true spirit, who is imbued with an intense love of his science irrespective of the pecuniary rewards it may bring, who has a lofty feeling of humanity and thorough conscientiousness, may only hope to be a great physician. As Nothnagel correctly says, only a good man can be a good physician. Certainly few men in the performance of their daily round of duties are so frequently rewarded by delightful gratification, for how often is he permitted to rejoice that by his masterly efforts human suffering is mitigated or life is saved. It is a truism that love of knowledge grows with its cultivation, and he who aims at the highest professional success should study his science until the pursuit becomes an absorbing passion. Only in this way will he be able to enlarge the foundations of human knowledge by adding something to the common stock. A question which of late has been much discussed in medical journals is this: Are the prizes held out by the medical profession commensurate with the toil and sacrifices which its practice entails? The answer to this question may be given unhesitatingly in the affirmative. There is no profession that is worthy of mention the successful pursuit of which does not involve as much toil and as many sacrifices as that of medicine, and at the same time there is none in which he who has the necessary attainments and qualifications is more certain of a proper reward for his labors. Let not the young man be discouraged and faint by the wayside because of the slowness of his progress toward the goal of professional success. It is a truth, which may be exemplified by inummerable instances, that you cannot tell from the first success of a professional person what his ultimate success will be. Many men who now honor and adorn the medical profession in the beginning of their career appeared to be unsuccessful, and were looked upon by their friends as failures. They spent their hours of leisure, however, in study and mental training, and when opportunity came they were ready to seize it and press on to victory. Nor should the worthy be discouraged when they see patient merit neglected and charlatanry flourishing. The scene enacted in Brooklyn recently, when, as the journal of the American Medical Association says, "this prince of nineteenth century charlatans is allowed to occupy a prominent church pulpit for the nefarious purpose of advertising himself and his wares," the reference being to Dr. Keely's occupancy of Dr. Talmage's pulpit, is far from being edifying. Such follies will have their day, but in due season the public will know better. Rather let the young aspirant for professional success lay to heart the life and character of such a noble man as Sydenham, to serve as a pattern, of whom it is said by his biographer that he had a benevolent and sincerer disposition, that what he knew would redound to the advantage of others he did not selfishly keep to himself, but liberally communicated to others.

AN INTERESTING CEREMONY took place at Philadelphia on April 30th, when portraits of Dr. Oliver Wendell Holmes and Dr. Alfred Stillé were presented to the College of Physicians, of which learned body the former is an Associate Fellow, and the latter an ex-President. The genial Autocrat is represented in the black robe of the Faculty; the picture was presented to the College by the President, Dr. Weir Mitchell, and the occasion was made especially interesting by an exchange of poetical courtesies between Dr. Holmes and Dr. Weir Mitchell, who though known chiefly for solid contributions to medical science and practice, can say of himself without any idle boast "*Anch' io son poeta.*" Alluding to the portraits of the

. . . Masters wise,
Who from your halls look down with kindly eyes,

Dr. Mitchell imagines them receiving the newcomer as follows:

. . . . Welcome brother, dear.
Yea, though Apollo won thy larger hours,
And stole our fruit, and only left us flowers,
The poet's rank thy title here completes,
Doctor and poet—so were Goldsmith—Keats.
The voices failing, murmur to an end
With "Welcome Doctor, Scholar, Poet, Friend."

He then goes on to picture how

In elder days of quiet, wiser folks,
When the great Hub had not so many spokes,

Minerva and Apollo, finding the youthful Oliver asleep on Boston Common, contended for him as Tragedy and Comedy disputed for the possession of Garrick. Minerva, representing Medicine, puts in a strong claim, but Apollo's eloquent pleading is so convincing that at last—

"Not mine," Minerva cried, "to spoil thy joy,
Divide the honors; let us share the boy!"

Dr. Holmes, in his turn, makes his portrait—

The crimson mantling in its canvas cheek

—ask how it comes

Here in this concourse of the grave and wise,
Who look upon me with inquiring eyes,
As on some homeless wanderer caught astray?
An *error loci*, Boerhaave would say.

He next refers to the

> Friends of my earlier manhood, ever dear,
> Whose lives, whose labors all were centered here;
> How bright each figure stands before me now,
> With eyes undimmed and fair unwrinkled brow,
> As when with life before us yet untried
> We walked the 'Latin Quarter" side by side
> Through halls of death, through palaces of pain
> That cast their shadows on the turbid Seine.

He goes to name several of them—Gerhard, Norris, Stewardson and others, and recalls some of the incidents of the second annual meeting of the American Medical Association, which was held at Philadelphia, and in which he took part. Dr. Holmes brings his little poem to a close with a parting appeal to the *genius loci.*

> Peace to your borders! Long may Science reign
> Supreme, unchallenged, o'er her old domain!
> While sons as worthy as their sires of old
> Her borrowed sceptre still unbroken hold
> Till a new Rush arise who dares to think—
> An unborn Leidy finds the missing link.

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ORIGINAL ARTICLES.

ARTICLE I.

SURGERY OF THE GALL-BLADDER AND DUCTS.

By J. McF. Gaston, M.D., Atlanta, Ga.

All those disorders of the biliary apparatus dependent upon obstruction of the hepatic, cystic and common bile-ducts call for surgical relief. Not alone the trouble from gall-stones, but those resulting from aneurism of the hepatic vessels, indurated tumors and adhesive inflammation of the coats of the ducts, come within the scope of progressive surgery. The field of investigation has been greatly enlarged in this department in a comparatively brief period, and many derangements of the gall-bladder and ducts, which were formerly intractable, are now within the domain of the aggressive surgeon.

The space allotted to this undertaking does not permit me to enter upon the consideration of many of the points involved in biliary obstruction, and my attention will be directed chiefly to the measures indicated in occlusion of the common duct. In regard to the procedure heretofore adopted, I would refer those who may be interested to my original article in October, 1884, in Gaillard's Journal; also to the reports of my experimental work in the *Atlanta Medical and Surgical Journal* for September and October, 1884, and September and November, 1885. A complete résumé of this subject was made in my contributions to the second volume of the "Reference Handbook," in 1886, under the headings of "Cholecystectomy," "Cholecystotomy" and "Duodenocholecystostomy." My paper on "The Surgical Relations of the Gall-bladder to Obstruction of the Ducts" will be found in the "Transactions of the Medical Association of Georgia" for 1886. A contribution to the British Medical Association at Brighton, in 1886, "On the Practicability of Establishing an Artificial Fistulous Opening in the Human Subject, between the Gall-bladder and the Duodenum," appeared in the *British Medical Journal.*

Having a few reprints of this paper on hand, I will cheerfully furnish them to such members of this section as may wish to investigate this matter. These publications included the data presented by others up to that time, and have doubtless had their share of influence upon the subsequent treatment of this class of cases.

The increasing interest exhibited by surgeons in the serious consequences resulting from any obstruction to the flow of the bile from the liver has been characterized by greater activity in affording surgical relief for these troubles. Various operative measures touching the gall-bladder and ducts, with crushing and needling of gall-stones, have brought about a revolution not only in the theoretic views of surgeons, but in their surgical appliances. A new era has dawned upon gall-bladder surgery, and old things are passing away, to be consigned to the sea of oblivion.

While the operation of natural cholecystotomy has been done in a large number of cases, by different surgeons, there has been no material improvement in its technique or in its final benefit to the patient. The organic changes to which cholecystectomy is usually thought to be best adapted have not been encountered so often as to require this measure in many cases. Yet the good results in a large proportion of the operations reported warrant its adoption under certain conditions, and I have suggested that in excising the gall-bladder, its upper wall should be left adherent to the liver.

Incision and suture of the wall of the common bile-duct for the removal of gall-stones have been done in twelve cases, with only one fatal result from the operation. Three of the cases have been operated on by Courvoisier, and one by each of the following named: Kummell, Heusner, Kuster, Rehn, Braun, Frank, Hochenegg, Marcy and Vanderveer. A stone has also been successfully excised by Ross from the cystic duct.

The development of the possibilities of benefit from the anastomosis of the gall-bladder and the common bile-duct with the duodenum and other divisions of the intestinal canal has latterly occupied the earnest attention of surgeons. When the natural outlet for the bile becomes obstructed, it is recognized as proper to effect an artificial passage for it into the intestine. A new departure in operative measures consists in connecting the walls of the common duct with the duodenum, as was done in a case reported by Sprengel September 3d, 1891, in the *Deutsche Medicinische Wochenschrift*, No. 36.

A woman, 40 years old, suffered from the usual concomitants of biliary obstruction. After the abdomen was opened the cystic duct was mistaken for the common duct, and the latter for the duodenum. A stone found in the first was pressed into the distended common duct and the passage was supposed to be free. But in another subsequent operation a stone was found in the cystic duct and a second at the portal channel, which was crushed. The common duct filled immediately with bile, and, in order to provide an outlet, it became necessary to connect the walls of the duct and the duodenum by incising each and bringing them together with stitches. In doing this some bile necessarily flowed into the wound but was not followed by any serious disturbance. Three months afterward the patient had recovered from all trouble, and it is to be inferred that the communication from the common duct into the duodenum continued open.

A modification of cholecystotomy by Wölfler has been adopted in a few cases in which all abnormal accumulations are removed from the sac and the ducts are freed from any concretions. With a fair prospect of the full restoration of their functions, the incision in the wall of the gall-bladder is closed and then attached by sutures to the parietal incision. It is provided in this operation that when the union of the incised wall of the gall-bladder shall be completed a separation of the attachment to the external parietes shall be effected so as to allow freedom to the gall-bladder. This process is based upon a doubt as to the efficiency of suturing the tissues of the sac; and in case of any yielding of the stitches, to favor the escape of the bile through the parietal wound instead of its discharge into the peritoneum. While the presence of freshly produced bile is not proved to be productive of serious results, this procedure implies an abundance of caution against the contingency of failure in suturing the sac. In the ordinary process of attaching the incised wall of the gall-bladder to an opening in the abdomen, styled natural cholecystotomy, with a view to give an outlet for the bile, there is no provision for utilizing this discharge from the liver. When the ducts are patulous, leading into the gall-bladder and into the duodenum, the process of ideal cholecystotomy by emptying the contents of the gall-bladder and closing the incision of the walls, with dropping this viscus into the abdomen, has been attempted with satisfactory results, and a successful case has been reported recently by Hardon. It would hence appear that all cases of the obstruction of the cystic and common ducts by gall-stones call for their dislodgement by one or another procedure to afford an outlet for the bile; and that the attachment of the incision in the gall-bladder to the opening in the wall of the abdomen leading to a discharge of the bile externally should be regarded as a mere temporary recourse. In the event of failure to effect an outlet for the bile, through the common duct, then cholecystenterostomy is clearly indicated. As to the portion of the intestine which should be selected for the attachment of the gall-bladder or the ductus choledochus, we have a definite guide in the entrance of the bile naturally into the duodenum; and the nearer to this an anastomosis can be effected the better result may be expected. The relations of the duodenum and jejunum to the gall-bladder ordinarily are such as to facilitate their union, and I have given the preference to the duodenum from physiological considerations as well as from surgical convenience while objecting to the colon.

It is, of course, presumed that there is such an occlusion of the common bile duct as to prove irremediable by other means before proceeding with an operation to effect an outlet for the bile by uniting the gall-bladder with the intestinal canal. A misunderstanding of this condition has led to misapprehension of the end to be attained by duodeno-cholecystostomy or cholecystenterostomy, and once for all, let me say, it is only warranted by occlusion of the common duct. It may be allowed me, without a charge of indelicacy, to quote in this connection, the pointed remarks of Greig Smith upon entero-cholecystotomy in the last edition of his work on Abdominal Surgery, as follows:

"By this operation is meant the establishment of a fistula between the gall-bladder and the intestine. The operation is indicated only in cases of incurable biliary fistula; that is, in cases where there is irreparable occlusion in the ductus communis choledochus. The original operation of Winiwarter successfully established a communication between the gall-bladder and the colon. In this situation the physiological effects of the biliary secretion were lost. Dr. Gaston, of Atlanta, Georgia, in a series of instructive experiments on dogs, showed how communication might be established between the duodenum and the gall-bladder, thus preserving in the system whatever value the bile may have. Gaston speaks of his operation as duodeno-cholecystostomy. Some misconceptions and misdirected criticisms of Gaston's operation have appeared in various journals; to these he has given satisfactory answers." Greig Smith states further that "this operation, when it is easily carried out, is theoretically the best. But fistula with the upper portion of the jejunum would be scarcely inferior to fistula with the duodenum, and fistula with any part of the jejunum, or even ileum, superior to fistula with the colon."

Having such recognition of my work in this book, and being endorsed [fully by McGraw in his address upon taking the chair of this section at the last meeting of the Association, I feel warranted in referring to the appreciation of my labors in this line by others at home and abroad, whose commendation does me honor.

In the review of my reviewers, which appeared in the *Medical and Surgical Reporter* of September 12, 1885, it was stated that I could bide my time for a just estimate of my experimental work, and the way is now open for an impartial consideration of this subject. In the comprehensive and elaborate record by Courvoisier of what has been accomplished during the last decade for the relief of biliary obstruction, my work has not been overlooked. He states that the experiments on animals were undertaken in the hope thereby of clearing up the way for a practicable future operation on man. Gaston sought to utilize the elastic ligature. In five dogs he carried it through the approximated walls of the gall-bladder and duodenum, in such a way that one-half of the tightly drawn loop lay in the former, the other half in the latter. The loop was to cut through both walls at the same time, and thus form a fistula between both cavities. At the close of his operations, Gaston placed a catgut suture around the place where the walls of the organs lay in apposition. In one animal the adhesions were completed by the eleventh day, and in this case there was a beautiful fistula, while the ligature had passed off through the intestine. In 1884, Gaston also made an experiment on a young dog with a silk ligature and obtained a good result. Later on he repeated these experiments with ligation of the common duct without satisfactory results. Courvoisier further states that Golzi reports five experiments on dogs. The common bile duct was ligated. Then, with a catgut suture, the surfaces of the gall-bladder and the nearest loop of the small intestine were stitched around a loop of suture, passed through each wall so as to cut through. It is stated that the animals bore the operations without material derangement of the digestion. It is also noted that Page operated in the same manner as Golzi did, on three dogs, omitting, however, the ligature of the common duct. One dog survived, one sank with peritonitis, and the third died after six weeks, showing a considerable shrinkage of the gall-bladder but without any fistula. The result is not known in the dog which survived. Courvoisier also alludes to the process suggested by Harley for effecting a communication from the gall-bladder to the intestinal canal. He proposes to effect a perforation of their walls by the use of caustic potash which would at the same time excite inflammation of the adjacent surfaces, and then stitch them together. This is expected to secure a union of the surfaces with a fistula in the center.

While each of the several operations may be indicated in special cases, the present outlook of anastomatic procedures for conveying the bile from the liver into the intestinal canal in obstruction of the common duct, is entitled to precedence in gall-bladder surgery.

All our resources being exhausted, without relief to the impediment for the discharge of the bile through the ductus choledochus, and finding the integrity of the gallb-ladder favorable for its attachment to some portion of the intestine, we may rest assured of being able to effect an opening from the former into the latter by which the bile shall subserve its legitimate purpose in the animal economy.

The various procedures adopted by Golzi, Page and myself in our experiments upon dogs were undertaken with a view to guide others in the performance of operations upon the human beings. This work must hold a place similar to that of pioneers, who have gone forth to blaze out the paths in an unexplored region and have set up danger signals to caution the unwary traveler who may come after them in the search for a route which shall lead to the goal of their expectations. Some quagmires and quicksands were encountered by us which may be avoided by others. All must allow that the fruit of our experience has thrown much light upon the intestinal labyrinth in which we groped without a guide to direct us at that period.

My efforts were directed at the outset mainly to the establishment of a fistulous communication between the gall-bladder and duodenum by means of an elastic ligature passed through their approximated walls. This was surrounded with a circular or an oval continuous suture of catgut, so as to effect the immediate adhesion of the serous surfaces. But it was subsequently found that a single stitch of silk thread united the surfaces and ultimately cut its way through the two approximated walls so as to effect a communication from the gall-bladder into the duodenum.

The difficulties encountered in ligating the common bile-duct subsequently were the greatest obstacles to the final success of this operation, and would not be encountered in case of pre-existing occlusion, which is the occasion of performing an operation on the human subject.

These and other experiments, undertaken upon twenty-one dogs, are illustrated in the cuts accompanying my paper laid before the British Medical Association.

It may be stated here that my conception of the procedures indicated were not limited to the means employed in these experiments, and it was distinctly set forth that some other process may be found preferable, and it rests with surgeons to adopt that which proves best.

A number of operations have been referred to by Courvoisier, Marcy, Vanderveer and Ross, as undertaken by different surgeons, with a view to secure the results aimed at; and I cannot perform a more profitable service to the profession than to present some of the details, gathered from various sources.

To Nussbaum is attributed the first suggestion of relieving the occlusion of the common bile-duct by discharging the bile into the intestinal canal through artificial openings in the adherent walls of the gall-bladder and the intestine.

But the credit of having first accomplished this result upon the human being is undoubtedly due to Von Winiwarter; and it affords me the greatest satisfaction to award him the honor of priority in the execution of cholecystenterostomy.

We are informed that, between the 20th of July, 1880, and the 14th of November, 1881, he treated for sixteen months a man, aged 34, who suffered from obstruction of the common gall-duct, and who was subjected to six different operations for the formation of a fistula between the gall-bladder and colon. All kinds of difficulties thwarted this undertaking, but it is claimed that he eventually succeeded in attaching the gall-bladder to a coil of the small intestine and effecting a fistulous communication, by which the bile escaped into the intestinal canal, thus obviating the inconvenience of an external outlet.

After a lapse of six years, during which the various experiments on dogs by Golzi, Page and myself were performed, Monastyrski united the gall-bladder with the jejunum on the 4th of June, 1887.

He incised the abdominal wall, punctured the gall-bladder, incised its walls and the jejunum, and sewed the edges with catgut. A fistulous communication was secured, two meters below the duodenum, but death ensued ultimately from carcinoma of the head of the pancreas, as verified by the autopsy.

The operation of Kappeler came next in the order of time, being done on the 6th of July, 1887, by uniting the gall-bladder with the ileum by Wölfler's suture. The patient progressed favorably for a time and returned to work, but eventually died on September 9th, 1888, fifteen months after the operation. The autopsy showed that a biliary fistula was established about eight feet from the ileo-cæcal valve; and that its intestinal orifice was provided with a valve which allowed the contents of the gall-bladder to pass into the intestine, but prevented the passage of the intestinal contents into the gall-bladder. Doubtless a similar provision exists in all such cases.

In the year following the operation of Kappeler, Fritzche accomplished a fistulous opening from the gall-bladder into the jejunum, three meters below the pylorus. At the post-mortem examination a carcinoma of the size of a walnut was found at the mouth of the common bile duct. Socin and Berdenheuer each attached the gall-bladder to a loop of the small intestine. The case of the latter died in the fourth week and no fistula was found. It is said to have been done with elastic ligature.

Robson operated on March 2d, 1889, upon a patient who had undergone a previous cholecystotomy, when the ducts were freed, and the gall-bladder was sutured to the abdominal wall with firm adhesion.

The common duct being subsequently occluded, an incision was made through the scar from the former operation, in the semi-lunar line, and it was found that the attachment of the gall-bladder could only be effected with the colon. Both were incised and united with chromic catgut in two rows. The former external fistula was sewed up and a drainage tube inserted in the wound. After one day bile came out of the drainage tube and also a fæcal matter from the intestinal wound. In spite of this, a speedy recovery with bilious matter in the fæces, is reported.

On July 13, 1889, Terrier performed an operation for the relief of occlusion of the common duct. An incision was made in the median line above the navel. The gall-bladder was punctured and the bile discharged. Upon incising its walls and exploring its cavity, no stones were found and the cystic duct was open. There was a gall-stone impacted in the oblong enlargement of the common duct which could not be removed. After attaching the gall-bladder to the duodenum by a circular or oblong row of catgut sutures and before tying the last stitches, the walls of both were incised and a rubber drainage tube was introduced, so as to pass from the cavity of the gall-bladder into the duodenum. The fundus of the gall-bladder was sutured to the lower angle of the external incision, which was then closed up by a catgut suture. There was fever until August 1st, but the itching and jaundice gradually disappeared. The drainage tube passed off with the evacuations nine days after the operation, and the stools gave evidence of the presence of bile. The external wound healed by first intention. The patient was dismissed on August 10th in ordinary health. This patient died in the spring of 1890 from influenza and no gall-stone was found in the common bile duct.

Courvoisier, in like manner with Robson, performed the operation of natural cholecystotomy upon a patient without getting a satisfactory result. After the lapse of a year complications arose, which demanded cholecystenterostomy, and this was done on the 28th of March, 1890. An incision was made through the abdominal wall below the ribs along the border of the liver. The gall-bladder was detached from the abdominal wall and, after incising the sac, a gall-stone was removed from the common duct and others scooped from the hepatic ducts. An incision into the lower surface of the gall-bladder was united to the colon by an oval row of catgut sutures, and before putting in the last stitches the wall of the colon was incised. The fistulous parts of the gall-bladder were cut away and the edges stitched up. Two drainage tubes were inserted and the external wound closed around them. There was no fever after April 2d. Bile was found on the dressings, but its source was not determined. There was bile in the stools on the 6th of April, and on the 8th the drainage tubes were removed and the external wound was stitched up. On the 15th of April the patient was free from jaundice and got up feeling very well. The case was dismissed about the middle of May, and in the middle of July her condition was excellent. There was no more colic or jaundice.

Courvoisier thus sums up the result of these seven cases. One person operated upon died as a consequence of a complication, which should not be charged to the method. All the others recovered from the operations, but in four of the cases the cancerous condition of the pancreas brought on death at a later period. A definite final cure only is claimed in the cases of Robson and Courvoisier, which, it will be remembered, had the gall-bladder attached to the colon, not by choice but from necessity.

The practicability of effecting an outlet from the gall-bladder into the intestinal canal can no longer be doubted, and in the view of Courvoisier it stands more and more securely as the details from trustworthy sources become more widely disseminated.

The indications for the operation are formulated by him as follows:

(A) When gall-fistulæ are difficult to remove, whether traumatic, ulcerative or operative.

(B) In permanent obstruction of the common bile-duct (except in cases of gall-stones).

(C) In traumatic and ulcerative perforations between the common duct and the abdominal wall.

It is contra-indicated in the following cases:

I. When the patients have grown very feeble, in which cases the provisional cholecystotomy might be used.

II. When the common duct is obstructed by gall-stones, in which cases lithectomy with stitching, or lithotripsy, are indicated.

A notice of a case of cholecystenterostomy has been reported by Helferich, in the *Deutsche Medicinische Wochenschrift*, February 25th, 1892, for the details of which I am indebted to Dr. P. J. Rozenheim, of New York.

The patient, a man aged 29, had suffered periodically from pains in the stomach since 1885, and developed jaundice in April, 1891. During the following month he had attacks of biliary colic, recurring every fortnight, the jaundice being marked after every attack. It was thought that the common duct was obstructed by calculi, and an operation for their removal was undertaken in November. An incision was made midway between the lower border of the ribs and the border of the enlarged liver, extending vertically in the linea alba to the ensiform cartilage. After the liver had been retracted, the gall-bladder came into view; it contained no calculi, but an examination disclosed a number of calculi in the common bile-duct, which it was found impracticable to remove. An opening was, therefore, made in the gall-bladder and another in the first part of the jejunum, and a communication was established between these structures by suturing the corresponding margins of the apertures. The fistula thus formed was of the caliber of a leadpencil. The patient made a rapid recovery, the symptoms of jaundice having disappeared. During the following January he experienced two slight attacks of fever, without any jaundice, which the author attributed to calculi in common bile-duct. As a means of affording palliation of his sufferings, the operation was a success.

Chavasse has reported in the *Lancet* an interesting case in which an anastomosis between the gall-bladder and colon was effected by a process differing materially from the previous operations. A man, 48 years old, had undergone cholecystotomy for the relief of jaundice, dependent upon biliary obstruction by calculi, which was followed by the persistence of a biliary fistula. Other means failing, with the aid of Senn's bone-plates a communication was established between the gall-bladder and the colon at its hepatic flexure. At first, bile and fæcal matter were discharged through the abdominal wound, but ultimately this closed, the stools were passed naturally and the general condition of the patient was much improved.

Korte also reports a successful case of the union of the gall-bladder with the duodenum after the manner of Terrier, thus affording two favorable results of duodeno-cholecystotomy.

So far as the operations are to be considered, those of Kappeler and Terrier were successes, and, being added to the other six final good results, give eight cures out of twelve cases in which the operation of cholecystenterostomy has been performed, being only twenty-five per cent. of mortality from the operation.

This encourages the expectation, with more improved methods, of obtaining a satisfactory solution of the problem of relief for occlusion of the common bile-duct. While other means may be employed for correcting temporary obstructions of the ducts, the great desideratum in occlusion of the common duct is to effect an artificial opening from the gall-bladder or duct into the duodenum or the adjacent portion of the intestinal canal.

The practice of tamponage with gauze around the locality of biliary exudations, whether connected with operations or from injuries involving rupture of the ducts or the gall-bladder, has proven successful in preventing the diffusion of bile throughout the cavity. Upon this principle it is found that the introduction of gauze in the vicinity of a sutured duct or an anastomosis with the intestine acts well and may be removed when the drainage tube is no longer needed.

REMITTENT FEVER.

By Arthur C. Blain, B.C.S., M.D., Macon, Ga.

Remittent fever may be defined as a miasmatic paroxysmal fever, characterized by exacerbations and remissions.

Among the various synonyms are bilious fever, bilious remittent, endemic fever, marsh miasm, gastric malarious remittent, jungle fever and continued fever.

Before entering upon the description of this troublesome fever, it will be necessary for me to trespass upon your time by referring briefly to the poison producing the disease.

Malarial Fevers.—This name is given to a group, of which the poison is a protozoön, and is regularly produced without the human body. It is produced, lives and grows in the earth; and is then (we know not how) communicated to human beings, and is not transmitted from one patient to another.

They are disorders characterized by a febrile movement, hence the name. Yet we find that the same poison produces malarial cachexia, where there is no fever, but disburbances of digestion, blood, nutrition, etc.

These diseases vary much in severity, from simple to some of the most fatal fevers. As to its distribution, we may say that malaria is universal. Wherever man is there will some of its forms appear, and it has been our luck, in this section of our country, to get that form which is calculated to try the patience of the physician more than any other of the malarial manifestations; although, fortunately for us, its tendency is toward recovery.

It is especially prevalent in the torrid and temperate zones; cold countries are less troubled by it. The most severe cases are seen in the tropical countries, Panama, India, Africa, etc. Here we find the continued or remittent fever. Right here I wish to point out the error, that too many of us make, of using the synonym "continued fever" for this disease, as it is both confusing and faulty, and in doing so I think it will be only necessary to quote the definition of simple continued fever given by Dr. J. C. Wilson. He says, "It is a continued fever, not due to specific cause, usually of short duration (24 hours to 10 days), lacking the distinguishing characteristic of the other fevers, rarely fatal in temperate climates, and showing, when death occurs, no characteristic lesion."

In this state we find the remittent form most frequently. I for one seldom see a case of intermittent type.

In temperate climates we can separate according to type of disease. In some localities we have pretty severe forms, but not so extreme as in the tropics. In the South and West there are places where malaria causes a number of deaths. In these localities we find that the disease does not remain continually; some years it is severe, again it almost disappears, and sometimes we find none at all. It may appear in a new locality at any time.

In the Middle and Eastern States, where it is less severe, this capacity for coming and going is developed to a marked degree; it may prevail for years and disappear without any noticeable change in soil or other surroundings, and after a few years it may reappear as suddenly as it left.

As regards the influence of soil and topography of country, I may say that in the tropics we find that prevalence diminishes with the elevation above the level of the sea; increases near marshes and stagnant water, especially if marshes or ponds have recently been drained. Also when soil is cultivated for the first time or when a field has been left idle for some time and then taken in again. In temperate climates these rules are of no importance whatever, and the milder the type the less will it conform to these rules. It will come in high or low districts, sandy, rocky or marshy soil.

To a certain extent its appearance is dependent on season. In the tropics it is especially prevalent during the rainy season. In temperate climates the rule is that it is most frequently seen in summer and autumn, but my experience has been that in this locality it is more often met with in autumn and early winter. The poison of the disease is produced in the soil and is independent of human beings. Favorable conditions for growth are heat and moisture.

The negro is less susceptible than whites. Some persons seem to enjoy an immunity from the disease, while others are seized after very slight exposure.

In uncomplicated cases it is a rare thing for malaria to produce death, and consequently the opportunities for correct study of the lesions are rare. You sometimes find discolorations in some parts of the body, usually in the liver and spleen, also less frequently in the brain. It was formerly supposed that these changes were due to deposits of pigment in the tissues, but this is erroneous.

In 1881 a physician in Algiers in studying the blood found regular changes besides the particles of pigment. Again in 1885 observers in Italy found the same changes constantly in the blood of these patients, and the same has been verified by observers in this country.

These changes are due to the presence in the blood of protozoa, which seem to belong to the animal kingdom. It makes its way into the red blood cell and is crescentic in form; sometimes it is pale and transparent, at others deeply pigmented. Again we find larger crescentic bodies, too large to be contained in the red corpuscles ; so these float freely in the plasma of the blood, and in these we constantly find pigment. Again we find flagellate bodies in the blood, whose tails are in constant motion.

So these protozoa produce the characteristic lesion of the disease, and the severer the case the more of these we find in the blood. These can be found in large numbers in the blood drawn during the febrile attack.

Quinine is a poison to these forms of life, and here we have the reason why this drug is recognized as a specific in malaria.

We have increase in size of the spleen and it is less firm in consistence.

The period of incubation is longer in this than any known disease except hydrophobia. It may vary from a week or ten days to several months; the length of this period seems to depend upon exposure, climate, etc.; is shorter in hot than cold countries. A patient once attacked may carry the poison in his body for years, yet only at certain times does it recur, may be year after year.

The invasion of the remittent form may be in one of three ways.

1. May first have several intermittent paroxysms, then changes to remittent.

2. May have a prodromic period of a few days, lassitude, furred tongue, and there seems to be some deficiency of biliary matter in the stools.

3. In this class the onset of the disease is sudden. In the latter case we are apt to have a chill or else shiverings, then the temperature begins to rise and soon reaches 103° F to 104° F. Face flushed, eyes suffused, intense headache and pain in back and limbs, pulse full and rapid, tongue coated, and may be nausea and vomiting. Fever lasts during all of the 24 hours, but not at the same height ; usually remits in the early morning. May have two remissions morning and evening. This variation in the thermometer readings seems to indicate to a certain extent the severity of the case; the higher the temperature during the remission the severer the case.

As a rule the bowels are constipated, but you may have large watery discharges. The urine is diminished in quantity, high colored and high specific gravity; there is an increase in amount of urea. There is as a rule no complicating nephritis.

In the early stages of remittent fever the tongue may be moist and large, covered with a white or grayish or yellowish coat. The edges may be indented with the imprints of the teeth (Osborne's malarial tongue).

Later it may become dry, brown and cracked and difficult of protrusion, but seldom shows the tremulousness of the typhoid tongue.

As the disease advances the temperature becomes higher and remissions slighter. Nausea and vomiting are the most constant and annoying symptoms in many cases.

Some cases are ushered in by a severe diarrhœa, and in children we frequently have convulsions.

All the excretions are tinged with bile. Epistaxis in remittent fever is a very common symptom, and we sometimes have hemorrhage from other mucous membranes, but you seldom see general disposition to bleeding.

Enlargement of the spleen to some extent is constantly present, and to determine this, a correct knowledge of the position of a normal spleen is necessary. The normal spleen is situated on the left side opposite the ninth, tenth and eleventh ribs; its posterior border is one inch to the left of the vertebral column and its anterior border reaches to the axillary line.

Jaundice is frequently present to a certain degree, but completely developed jaundice is rare. For a better clinical understanding, we will consider three types of the disease.

1.—*Mild Cases.* The temperature is not very high, not over 104° F., and these are not very sick, but are in bed and complain of headache, prostration, anorexia, etc. We are not anxious about these cases.

2.—*Severe Cases.* Temperature 104° to 107° or even 108° F., remissions not very marked, and second week they look more and more like typhoid patients, emaciation, tongue and lips are dry and brown, teeth coated with sordes, alternating delirium and stupor, though the delirium shows less perversion of the reasoning faculties than in typhoid cases, and after we arouse them we are enabled to get intelligent answers from our patients. There seems to be considerable loss of memory. They may have retention of urine and involuntary evacuations from the bowels. They lie listlessly on their backs and look like second and third weeks of typhoid fever; these are typhoid symptoms in malarial fever.

To these cases the name typho-malarial fever has been given. The name typho-malarial was introduced into medical nomenclature by Surgeon J. J. Woodward, U. S. A., who presented a paper to the International Medical Congress at Philadelphia in 1876. The following is an extract from the proceedings, which will show the interpretation of the term. On motion of Dr. Woodward, seconded by Dr. Pepper, the following was adopted, as expressing the opinion of the section : " Typho-Malarial fever is not a specific or distinct type of disease, but the term may be conveniently applied to the compound influence of malarious fevers and typhoid fever." Hence the term can properly be applied to only such cases where we find both diseases existing simultaneously in the same subject. I for one would have been much obliged to Dr. Woodward had he never introduced the term into medical literature.

3.—*Malignant Cases.* In these you find your patients rapidly overwhelmed by the disease. Cerebral symptoms come early and are pretty marked; they develop a disposition to bleed from mouth, nose, stomach or intestines; there may also be petechial extravasations beneath the skin. Disposition to jaundice often well marked. These are very fatal cases and need to be differentiated from yellow fever.

The cause of the disease is undoubtedly the specific germ, but certain conditions are necessary, viz., suitable soil or pabulum, suitable moisture, suitable temperature and sufficient time for its growth and development.

The poison possesses ponderability and the atmosphere is undoubtedly the medium through which it is disseminated, although as yet we are not prepared to say just how it is taken into the system.

Liability to the disease is in direct ratio to the proximity to the hotbed of malaria, as we may term it. Continuous currents of air passing in one direction for some time over the breeding place of malaria are usually followed by an outbreak of the disease.

It is a popular idea that milk often carries the poison, when left in open pans over night; also the Muscadine grape, which grows in low places and has a rough skin, is thought to carry the disease, and I believe the charge against this fruit, either as regards the fruit itself or the exposure during the search for it, as I have seen several cases where I thought the fever was contracted in this way. The duration of the disease is indefinite; it goes on from five days to three or four weeks or more. Many recover all right, but some, after following this type for several weeks, change to the intermittent and ultimately recover. Death seldom occurs earlier than the eighth day. During convalescence many patients are troubled with pains in their limbs, which seem to respond to anti-rheumatic remedies better than to any others.

Diagnosis.—The mildest cases of this type of fever closely simulate the intermittents, as the temperature curve is marked by sharp angles and long tracings. But in these cases we care very little about the variety, for the treatment should be the same.

There can be no doubt that typhoid and the adynamic forms of remittent fever are often confounded, but when the eruption appears in the former, the doubt is removed. In remittent the skin is frequently jaundiced; not so in enteric. Abdominal tenderness, except in epigastric and hepatic regions, usually absent in the former, are present in the latter; we also have the iliac gurgling. In remittent, the stools are usually dark colored and bilious, with constipation as the rule. In typhoid, we usually have diarrhœa and pea-soup passages or brownish-yellow with mucous flocculi.

If hemorrhagic tendency appears in the course of remittent, it is usually from mouth, nose, stomach or urinary tract, but seldom from the intestines; while in typhoid it is the rule to have it from this latter source; then we may be guided by the temperature chart. Lastly, a careful examination into the history will assist you in your diagnosis.

The malignant cases of remittent may be confounded with yellow fever, but with a careful attention to the following points I think a diagnosis may be arrived at, although I believe that in many cases the proper treatment for one would cure the other.

Yellow fever is continuous, albuminous urine is the rule, spleen not so much affected, hemorrhage from the stomach and other viscera the rule in yellow fever, black vomit. Death is common on the third day, and in the most malignant cases of remittent it seldom occurs before the seventh or eighth day. Convalescence rapid after yellow fever, slow after malaria.

The facial expression in remittent is somewhat characteristic; during pyrexia the face is flushed and eyes injected, but redness more marked and expression more animated than in either yellow or enteric fever. The natural facial expression is better preserved than in either of the other forms of fever.

Death from an uncomplicated case of remittent fever should be a rare occurrence when properly managed; even in the worst cases where you see your patient early in the disease the prognosis is favorable.

I shall devote a few lines to prophylactic treatment. In persons exposed to the malarial miasm it is a good plan to give daily doses of quinine (5 to 10 grains) each morning and for them to avoid night exposure. Should you see a patient in the prodromic stage of lassitude, furred tongue, foul breath, etc., I believe that you could often prevent an attack of remittent fever by giving a mercurial cathartic followed by quinine and a mineral acid.

Actual Treatment.—The patient should be put to bed in a well ventilated room. They require good nursing. Regulate diet—a fluid diet is necessary, and milk is the best to rely upon; you may have to boil milk and give it iced or you may peptonize it when necessary. You can give the juice pressed directly from rare beef or give chicken broth, beef tea, etc. I believe it best to give all nourishment in small quantities and at frequent intervals.

Drugs.—Should you see a patient where the disease is ushered in by severe chill (which is seldom the case), you may abort the paroxysm by hypodermatic injections of morphine, alone or combined with pilocarpine (1-10 to 1-5 of a grain), or you may use mustard and hot water as an emetic or give chloroform. Large doses of antipyrin have been suggested to cut short the chill, but as yet I have never had occasion to try it.

The natural tendency is to give the same drugs as in intermittents (quinine, arsenic; Warburg's tincture, etc.), and in many cases they do good; hence when called, I think it good treatment to give them a trial, but if after a reasonable time you see that you do no good, do not push them further.

Give quinine in large doses—20, 40, 60 or even 100 grains in the 24 hours—and you will often be rewarded by seeing a dry tongue become moist, skin bathed in perspiration, delirium cease and patient sink into a quiet sleep.

In these large doses it is best to use powders or solution.

If after a week you do no good, stop your quinine and use only a sustaining treatment for a week or so, and then exhibit the drug again, and you will often now be successful, for there is a marked difference as to the time when the drug will do good. The same may be said of Warburg's tincture. I cannot leave this drug without referring to the proper mode of administering it in severe cases; it is best given on an empty stomach. Say in the early morning, give from two to four drachms; then do not give any food for three hours; then repeat the dose. For milder cases one drachm three times a day will be sufficient.

In these cases, while you are using the sustaining treatment, I think it a good plan to prescribe arsenic in the form of Fowler's solution 5 to 10 minims three times a day, more as a placebo than for its curative effects.

Venesection is used in some cases, but I doubt its efficacy, as we have no inflammation to combat. If they pass to the typhoid state, the heart may need supporting. Stimulate by whiskey or brandy, and you may combine with it digitalis, caffeine, nux vomica, strophanthus or convallaria.

If the vomiting is severe, you may control it by cracked ice, champagne, opium, chloroform, spice plaster to the epigastrium, or, as I prefer, oxalate of cerium and bicarbonate of soda.

In excessive temperature we have many useful drugs at our command with which to combat it, though I only wish for or expect to reduce the temperature two or three degrees, so as to make the patient more comfortable. For this a prescription containing Tr. Aconit. Vin.

Ipecac and Spts. Aeth. Nit. is often useful. When this does not answer, I rely upon Phenacetin as the best drug at our command, in doses of 5 to 10 grains, as the case may demand, repeated often enough to keep the patient at a comfortable temperature. Sponge baths in tepid water will be found very grateful to the patient and valuable in controlling temperature.

It is my practice in all cases when called early, to give a cathartic, and I prefer a prescription containing Quinine, Blue Mass, Rhubarb and Podophyllin, and in many cases following this you will find that the temperature will subside and you can control by quinine. In the use of quinine in severe cases it is not necessary to wait for the remission, but get them under the influence of the drug as soon as possible. In milder cases it is best to exhibit the antipyretic during the period of remission.

The use of the bitartrate of Potassium as a depurative drink will be found very agreeable to your patient.

Convalescence is quite slow and often accompanied by pains in the limbs, which can be controlled by Phenacetin and Salol. Convalescence will be greatly assisted by a tonic of nux vomica combined with nitro-muriatic acid and some one of the bitters. At this period the appetite is often voracious and must be controlled.

Before closing, I wish to call your attention to measures used in a few cases, which have given me very gratifying results and I regret to say that I have to draw on my memory, as I have kept no case notes; so it will be impossible for me to refer to the temperature charts.

Case 1.—On Oct. 15, 1888, S. X. called at my office, showing symptoms of malaria with slight fever, which he stated had been intermittent for a week or more. I gave a mercurial cathartic and the day following I called to see him, found fever quite high, and it did not go off for 16 days. He had a marked case of remittent type.

In this case the quinine affected the head, increased headache, etc., so I gave antipyrin, which was of no value except to produce a rash over the anterior surface of the body. I resorted to the use of Warburg's Tr. in the manner set forth above, and I believe it shortened the attack.

Case 2.—In July, 1889, I was called to see a child 6 years old. I found her suffering from remittent fever; had been sick for about two weeks. After using the ordinary method of treatment for about ten days, I found my patient rapidly growing worse and vital forces failing. I told the family that I could give them no hopes as to her recovery; so I thought as she was going to die anyway I could do no harm by giving quinine freely; so ordered 20-grain doses of Sulph. Cinchonidiæ every three hours; after taking the third dose, the fever left and the child made a good recovery.

Case 3.—On Oct. 30, 1888, I was called in the country to see a patient who had remittent fever. My usual method of treatment was continued. In this case the nausea was especially marked, with occasional vomiting; patient growing worse. On Nov. 10th Dr. H. Burford saw the case with me, and as nausea was so troublesome we decided to have it over, so we gave an emetic of 20 grains of ipecac and warm water, which effectually put a stop to the nausea, and soon after the fever cooled and recovery was uninterrupted.

I will only trespass upon your time to record one more case, which is interesting to me from the fact that it was the first case in which I gave Phenacetin a thorough test, and I have never regretted it.

Case 4.—Patient X. W., male, age 20 years. On Jan. 2, 1890, I was called in. Patient stated that he had been having some fever each day for about a week; gave usual cathartic, and aconite and nitre mixture, which had no effect; evening temperature usually stood at 105° F. and morning about 102° F. Once during the progress of the case the evening temperature was 108° F. In this case, whenever the temperature would rise, I would give a 6 gr. capsule of Phenacetin and could bring the temperature down two or three degrees, though I could never bring it down to normal. Patient grew very weak and it was necessary to stimulate heart, so I added Digitalis and Tr. Nux Vomica to his whiskey, which was given every second hour, day and night.

The nourishment used was milk, kumyss and beef tea.

Quinine, Warburg's Tr., etc., were tried and had no effect, so were stopped and only the supporting treatment used, keeping at a comfortable temperature by phenacetin and sponge baths. The fever ran for twenty-seven or twenty-eight days, when at 1 A.M. I ordered 8 gr. doses of phenacetin separated every second hour. After the third dose the patient's fever left for the first time, and his temperature fell below normal and he had a very severe chill. I gave whiskey freely with digitalis, put hot bottles around patient and administered 20 gr. quinine.

This patient was soon able to be out but exerted himself most too much and had fever again for a few days. This was easily controlled. He was troubled a good deal with pains in the limbs, which were relieved by phenacetin and salol.

ORIGINAL FRENCH TRANSLATION.

TERTIARY SYPHILITIC ANGINAS.[1]—DR. GOUGUENHEIM.

Translated for Gaillard's Medical Journal by H. McS. Gamble, M.D., Moorefield, W. Va.

There exists still *another deep and perforating form of tertiary angina*, manifesting itself upon the posterior aspect of the pharynx; it is fortunately of extreme rareness, for the symptoms that it may present are of formidable gravity.

Following it destruction of the bodies of the vertebræ sometimes supervenes with meningo-medullary lesions and consecutive paralyses. We mention as one of the rare complications of this angina ulceration of the arterial vessels, which may give rise to fatal hemorrhages.

Tonsillitic Form.—This is very rare. Natier in his recent memoir has reported but few cases of it. Juhel-Renoy has also seen two or three well-marked cases of it. For my part I have had the opportunity of observing a very few rare cases of angina in which the diathesic symptoms were distinctly limited to the tonsil. One there sees an enormous swelling of the tonsils with redness and œdema. Through openings of variable size there flows a thick pus which has caused the belief in the existence of a chronic abscess. The tonsil is ordinarily smooth, sometimes anfractuous, vegetative, of bad aspect and liable to give issue to a more or less fetid muco-pus. I have had in my service a patient who for some time was treated without result, the diagnosis being chronic abscess of the tonsil; there was swelling of the neck and adenitis of the submaxillary ganglions. Specific treatment, rigorously instituted, very rapidly effected a complete cure of the tonsillary affection. In this variety of tertiary angina there may be breaking down of the tonsil and very grave alterations of the subjacent tissues with hemorrhage.

Such is the ensemble of the signs pertaining to each variety of tertiary syphilitic angina. Now what are the functional signs of this affection?

Pain is quite rare. It is not even a distinctive sign from scrofulous angina. This pain is so slight that the majority of patients do not notice, at the commencement, symptoms which have declared themselves some time before and which they support with remarkable tolerance. However, I have remarked that, according to the seat of these anginas, there might be sometimes an acute pain.

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[1] Continued from last number.

Disorders of speech are, so to speak, never wanting; the voice is always nasalized. This is a symptom which is often the first to show itself, but to which patients attach importance only after the lapse of time upon not seeing it disappear of itself.

Disorders of deglutition are also rarely absent. This function is especially affected when adhesion has taken place between the veil of the palate and the pharynx. As I have already said, the same cause may suffice to explain the disorders of the sense of hearing. In one case in which the adhesion of the veil of the palate to the pharynx was unilateral, the patient heard very well on the side upon which there was no adhesion. These disorders of audition, attributed always to some alteration of the tubal mucous membrane, may be the consequence of an occlusion of the opening of the eustachian tube caused by contractions of the elevator muscle of the veil, which prevents the passage of the air from the pharynx into the middle ear. Disturbances of this nature ought to be rigorously treated, and in certain cases it may be necessary to have recourse to catheterization of the eustachian tube.

In tertiary anginas, it is rare that the *general health* of the patient is disturbed for a long time, at least before the supervention of grave disorders of deglutition. However, in cases of heredity, the general health is the more frequently profoundly affected.

Rare Forms of Tertiary Angina.—There may be tumors developed upon the pharynx on the posterior aspect of this conduit, where they project to such a degree sometimes as to constitute a veritable hindrance to deglutition. During my service at Lariboisière I operated upon a tumor of this kind, of enormous size, of the form of a cylinder of one to two centimetres long, mobile, and covered with molds and algæ at its anterior extremity, which struck the base of the tongue. It grew from behind the posterior pillar, and I could cure it only by resecting it with the hot wire. The patient, then subjected to specific treatment, completely recovered. However, three years afterward I was obliged to perform a second operation, and then the patient was readily cured.

How do troubles of this kind appear to be developed? I believe that ulcerations are the point of departure of vegetations which are organized and come at length to constitute veritable tumors, here as in the larynx. These neoformations are always rebellious to internal treatment. Their rapid development and their volume, sometimes enormous, always demand a radical operation.

It remains for us to speak finally of *another extremely rare form*, which is the syphiloma en nappe of the pharynx and veil, and non-perforating. It presents itself under the aspect of a series of reddish tumors of variable size, invading the pillars, the veil, and above all the uvula, which becomes enormous and deformed. I have seen one very distinct case of this affection which is so rare that in the rich Museum of the Hospital Saint Louis I have not been able to find a specimen of it. In the entire medical literature I have only been able to find one case, that of Royer (of Challes), which was absolutely similar to mine. In the case of my patient, the larynx was ultimately invaded by similar tumors and paroxysms of suffocation demanded tracheotomy. Treatment was instituted and persistently continued; the patient was cured not only of his laryngeal troubles, but also of his pharyngeal tumors; before tracheotomy, we had obtained almost no results by the specific treatment. Thus, then, in spite of the assertion of some authors in whose opinion this form of tertiary angina is rebellious to all treatment, it is true beyond all doubt that there has been some exaggeration and that it is susceptible of cure.

Duration.—The duration of tertiary anginas is naturally very variable. Sometimes the cure may supervene in a very short time, from three to five weeks. Consecutively to the ulcerations there are produced whitish stellate superficial cicatrices, which are characteristic.

Sometimes, however, the duration of these tertiary anginas may be from a few months to a year, with ameliorations or relapses.

Diagnosis.—The diagnosis of the first two forms of tertiary angina (pharyngeal ulcerations and perforation of the veil of the palate) is to be made exclusively from tuberculosis and scrofula; the third form, the tonsillary, is easy to confound with cancer.

This is, à propos of the ulcerations of the posterior surface of the pharynx, the moment to remind you that the tertiary anginas have been too readily confounded with scrofula by Isambert, Constantine, Paul and his pupil Fougère. There are in reality very few physical signs that allow one to clearly differentiate scrofulous pharyngeal ulcerations from those which are specific. The imagination has often played a great rôle in the differential descriptions of them which have been given to us. Depending upon what had already been said à propos of the tongue, the statement has been repeated that in scrofulous, but above all in tuberculous angina the ulceration was elongated, flattened with yellowish granulations, and slightly elevated, but deglutinated edges; that, in syphilis on the contrary, the ulceration was less extended, the borders higher and the mucus harder and dryer. These are, it must be confessed, rather indefinite characters and very difficult to appreciate. So

I have seen frequently cases of angina the nature of which was impossible to determine. The treatment alone furnishes the key to the diagnosis, unless one happens to meet with those mixed cases to which Ricord gave the expressive name of *scrofulate de vérole.* We now possess a valuable means of making a precise diagnosis of these cases, formerly very difficult to determine, a means still unknown in 1871, at the time of Isambert's communication: it is the investigation of the bacillus of Koch in the tuberculous tissues.

In cases of angina of the veil of the palate, the diagnosis presents less difficulty. It may be said, in fact, that every perforation of the veil of the palate is almost always specific. So, when you see an ulceration seated upon the veil of the palate, with one or more small perforations, you can without hesitation affirm the syphilitic nature of the lesion.

In the publications that I have named to you, it is only exceptionally that the authors have been able to cite cases of tuberculous ulcerations situated in this region. In some ulcerations due to lupus, one may, it is true, sometimes see these perforations. But they are ordinarily marginal at the commencement; starting from the borders of the veil of the palate they have a progressive, serpiginous march. Bacteriological examinations, which can demonstrate the presence of bacillus and, above all, the co-existence of lupus elsewhere, show the tuberculous nature of the lesion. However, certain syphilides may produce ulcerations having the same aspect as those of lupus, with their progressive, serpiginous tendency, and their painless evolution. When it is a question, outside of lupus, of an affection more frankly tuberculous, we see on the part of the uvula signs that allow us to suspect the nature of the disease. The uvula is tumefied, filled with large, yellowish, opaque elevations. I have had occasion to observe two cases of this kind, and, particularly in one patient who was treated for a long time as a syphilitic by one of my confrères: the uvula was enormous, yellowish, opaque, but without ulcerations. I performed excision, and the histological examination demonstrated that it was really a case of tuberculosis.

So then, to sum up, understand that, in the diagnosis of tertiary anginas there are but two good signs; 1st. Specific treatment; 2d. The discovery of the bacilli. If you see in a patient an ulceration of the veil of the palate, accompanied by perforation, you can almost invariably affirm the existence of syphilis. If the ulceration is seated upon the pharynx, your diagnosis will have to be more reserved; in case of an averred tuberculous subject, already presenting ulcerations of the tongue and lips, pronounce in favor of tuberculosis. Be positive, however, only when the bacteriological examination shall have shown you the presence of the bacillus of Koch.

It now remains for us to consider the diagnosis of the third form of angina, called tonsillary. In the greater number of cases this form is not so limited, the tonsil being usually affected with the pillars and the veil of the palate. But, in certain cases, as we have seen, the tonsil may be attacked alone. The diagnosis becomes then very difficult. Certain tonsils are anfractuous, ragged, giving issue to a sort of purulent mucus. Is this simple hypertrophy? Is it tertiary angina? In simple hypertrophy, both tonsils are generally affected at the same time, while in tertiary syphilis, there is more frequently but one. *Unilatéralite*, this is one of the chief characteristics. Is the acute pain a sign of equal value? But this pain exists in all chronic amygdalites. It is the same as regards the more or less thick and abundant secretions—a symptom common to all inflammations of the tonsil.

It is from epithelioma at the commencement that tonsillary syphilis is of sufficient diagnosis. But these two diseases are fortunately pretty rare. Adenitis will be a good sign of cancer, although it may be that one will meet with it in tertiary syphilis. Do not forget, however, that fœtidity and the bloody appearance of the expectorated matter plead in favor of cancer.

If the tonsil is open, yielding muco-pus, there is reason to believe in the existence of a chronic abscess of the tonsil. But this latter affection is very rarely seen, and then it is that it will be necessary to have recourse to the specific treatment in order to escape from embarrassment.

Such is the diagnosis of tertiary anginas upon their most prominent lines. I will add that examination of the larynx is also of great importance and that it ought not to be neglected. It will thus be seen that in cases of syphilis, the epiglottis is often hypertrophied, embossed and ulcerated, while in tuberculosis there will be more particularly a generalized hypertrophy of the organ.

Treatment.—In tertiary anginas the specific treatment is often as long as difficult in application. Ought we to institute concurrently a serious local treatment other than simple antiseptic washes? Its value is not certain, but this accessory treatment is necessary, for it often yields excellent results.

Cauterizations ought therefore to be employed either with the nitrate of silver or with the galvano or thermo-cautery; we can also make use of the tincture of iodine, but its therapeutic value is less certain. The acid nitrate of mercury is a dangerous agent, for its caustic action is too difficult to limit. The nitrate of silver well merits all the desirable conditions; it modifies the surface of the sores and facilitates the approachment of the borders. All these caustics are useful and never do harm, and they very materially aid the effect of the general treatment.

As to the latter, its importance is capital, but its employment is more difficult than might be supposed. Thus, Isambert more especially, and Constantin Paul, having obtained no therapeutic result, ordered its cessation for the greater part of their patients at the close of too short a period of time—two weeks. It is necessary to continue it for a long time, often even for several months, with the necessary interruptions, in order to accomplish the cure of anginas which had for a long time appeared rebellious to all treatment.

Is it to the mercurial treatment pure, or mixed, or to the iodide treatment that we ought to address ourselves in such cases? In the opinion of many authors these ulcerous lesions, by reason of their long continuance, are amenable only to the iodide of potassium. For my part, I believe the mercury preferable. Do we not see, in fact, the grave visceral disorders get well more rapidly under the influence of mercury than under that of the iodide? Employ then either frictions or mercuric hypodermic injections according to the formula of Delpech. The mixed treatment will be that which you will ordinarily employ; in almost all cases, address yourselves then to the syrup of Gilbert, composed of bin-iodide of mercury and iodide of potassium. Other physicians recommend iodide of potassium associated with the pills of Sédillot or of Dupuytren. If you have recourse to the iodide, do not be afraid to commence with large doses; you can, at the commencement, prescribe two grammes of it per day, but without ever exceeding six to eight grammes, rapidly increased. You can also give concurrently iodide of potassium and the syrup of Gilbert, for you cannot push the dose of the latter too much without inconvenience to the digestive canal.

Whatever may be the treatment employed, it is necessary to watch over the state of the digestive functions. If they show any disturbance, as often happens, suppress the treatment and administer a mild purgative. When everything is restored to order, resume the treatment after a few days.

It happens sometimes that, with certain patients, the intolerance of the stomach and bowels renders impossible the administration of mercury by the digestive tract. It may then be supplemented by hypodermic injections of peptonate of mercury. They have been reproached with determining accidents, but when practised with the necessary precautions, they never cause abscesses, and produce at most a pain that persists but a little while after the puncture. If mercury is not tolerated by the mouth and throat, address yourselves then to the iodide of potassium, of which I do not fear the ill effects, whatever may have been said, but the action of which is less energetic and less rapid than that of mercury.

When the specific treatment is pursued, it must not be forgotten that mercury is a powerful destroyer of blood globules, and that it produces a rapid debilitation of the organism ; it will therefore be useful to recommend to patients the simultaneous employment of tonic remedies, such as iron and quinine.

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HOSPITAL RECORDS.

THE BACTERIA IN WOUNDS AND SKIN STITCHES.

By Hunter Robb, M.D., Associate in Gynecology, and Albert A. Ghrisky, M.D., Assistant Resident Gynecologist to the Johns Hopkins Hospital.

We have recently made a series of careful bacteriological investigations of the stitches removed after abdominal and perineal operations, as well as the fluids along the line of the incision, in forty-five consecutive cases, for the purpose of ascertaining the presence or absence of bacteria. The importance of such a study cannot be overestimated if we bear in mind the prevailing view that germs influence—

1. The union of freshly denuded parts ;
2. The elevation of the temperature after operation ;
3. The necessity of the isolation of the case when there is evidence of sepsis ;
4. The choice of ligature material—because of studies showing that certain forms of ligature material are peculiarly prone to harbor germs.

It is frequently remarked by the surgeon, in a given case, that a wound has healed by "primary intention," and therefore has remained free from germ contamination. This inference, we are convinced, is unwarranted, and cannot be considered as proven, unless the stitches and fluids in the line of the incision have been bacteriologically examined and the assertion thus proved. Sometimes the wound secretion amounts to but a small amount of serum or mucoid-serum, or sero-pus, and at other times it is mixed with a little blood, or a trace of pus-like fluid is discovered in the track of the incision, or even clinging to the buried portion of the stitch. When this stitch is removed, the organisms thus obtained present in some instances virulent characters, and are capable of producing marked suppurative changes when injected into animals.

We believe that it is impossible to secure a wound entirely free from micro-organisms, especially where tissues are constricted by ligatures; nor is it possible to affirm that the wound or the stitches are free from pyogenic organisms, without a microscopical and culture-tube examination. This we have proven in several instances where the abdominal stitches were removed on the sixth or seventh day following the operation. No induration, redness or tenderness was present around the incision, nor anywhere on the abdomen, nor was there any systemic disturbance. Yet, upon examination of the secretions and stitches removed, large numbers of bacteria were found, and when these were of a virulent character, suppuration followed, a result not alone demonstrated by our experiments, but naturally expected to occur. The practical deduction to be gained from this is evident; for example, in a case where the streptococcus pyogenes exists, either in the fluids of the incision or on the sutures, we are able at once to employ all possible means of diminishing the virulence of the organisms by disinfectants; also we are able to reduce the danger of infection in other cases.

We have examined the stitches and secretions in thirty consecutive cases of coelitomy, and in fifteen cases of perineorrhaphy.

Examination of Sutures and Fluids.—Our method of examining the sutures and secretions has been as follows: The gauze protective dressing that covers the line of incision is removed, and then a deep stitch from the upper and lower angles and middle of the incision is taken out with a pair of sterilized dissecting forceps, by cutting the stitch below the knot on one side with sterilized scissors, and immediately the inoculations and cover-slip preparations are made. To do this it is necessary to extend the ligatures between the forceps and scissors, by holding the ends, and then a sterilized platinum needle is rubbed on all sides of the suture, and a slant agar-agar tube inoculated. From this stitch the smear preparation is made by rubbing the glass side over it. The agar tubes are then placed in the thermostat. The smear cover-slip preparations are at once stained with methylene-blue and examined for bacteria. In all the cover-slip examinations we have found bacteria, without exception. Those present were the skin coccus (the staphylococcus epidermidis albus), the staphylococcus pyogenes aureus, the staphylococcus gilvus and the streptococcus pyogenes. Superficial stitches have been treated in like manner and the same results obtained.

The number of bacteria depends upon several conditions. We find that they are more abundant when the drainage tube is employed. In these cases there is an increased amount of secretion, both immediately around the tube and on the sutures nearest the tube; also where the tissues are unduly constricted by the sutures; and in consequence of this constriction the number of bacteria is increased. This, in all probability, is caused by the diminished resistance of the tissues. The numbers are also influenced by the form of suture material employed.

All the sutures examined were previously sterilized, as we proved by culture methods. Catgut sutures offer less resistance to bacterial invasion and they furnish a more favorable soil for bacterial increase than either silkworm gut, silk or silver-wire sutures. The knot of the catgut suture is especially rich in organisms. It consists almost entirely of a mass of bacteria. Silk sutures contain numerous bacteria, but a smaller number than the catgut. Silkworm gut is the most resistant and harmless suture material that we have yet used. Its smooth, compact surface, without interstices, does not afford a good nidus for bacteria. We find many bacteria on silkworm gut sutures, but they are fewer than on either silk or catgut. The amount of secretion that at times is present on the silkworm gut is very slight, and renders it exceedingly difficult to procure a sufficient quantity for a microscopical examination. If the silkworm gut sutures are too dry for microscopical examination, it might seem that they were entirely free from bacteria. This, however, we have shown is not the case, for if bouillon cultures are made of this dry ligature, we invariably obtain luxuriant growths of organisms. This, is of course, a crucial test. Silkworm gut does not produce the same constriction as either silk or silver wire, but acts more by splinting the tissues, and for this reason, and also that it can be so readily sterilized, it is an admirable suture material. In order to increase the resistance of catgut and silk sutures to bacterial invasion we have recently used them paraffined. They are prepared by drawing the sterilized sutures through sterilized liquefied paraffine and allowing them to harden in absolute alcohol. We are unable to make any definite statement concerning these sutures as yet.

Silver-wire sutures likewise become infected from the wound. As the silver wire cuts and bruises the tissues, it is inferior to silkworm gut.

We desire especially to emphasize the importance of ascertaining the kind of bacteria present in the wound or on the stitches. For example, in three instances the streptococcus pyogenes was found both on the sutures removed and in the secretions in the incision. Two of these cases occupied adjoining beds; well marked suppurative changes with systemic disturbances followed in each case. We immediately isolated them, thus preventing the further infection of subsequent cases. In these cases the drainage tube was not used, and this precaution, in all probability, prevented a streptococcus peritonitis, which might have happened through the medium of the drainage tube from the skin infection.

Conclusion.—From our observations we feel justified in drawing the following conclusions:

A wound at some time of its existence always contains organisms. They occur either on the stitches or in the secretions.

The number of bacteria is influenced by the constricting action of the ligatures or drainage tube, or anything interfering with the circulation of the tissues.

The virulence of the organisms present will influence the progress of the wound.

The body temperature is invariably elevated if the bacteria are virulent; and, indeed, in cases where many of the less virulent organisms are found, almost without exception, there is some rise of temperature,

Different suture materials offer different opportunities for bacterial development. The catgut suture would seem to be the best adapted to their growth. In the event of the presence of the streptococcus pyogenes or staphylococcus pyogenes aureus infection, such cases should be isolated as far as possible, to prevent the infection of subsequent cases, which almost invariably follows where isolation is not practised.

Undue constriction of the tissue by ligatures must be avoided, if the tissues are expected to resist bacterial invasion.

Such bacteriological examinations as we have just reported teach us the importance of securing an aseptic field of work and technique. as the introduction of a virulent organism under the above circumstances would be productive of great harm.

We have no sure and absolute method of rendering the field of operation entirely free from organisms owing to the impracticability of destroying them in the superficial layers of the skin. The staphylococcus epidermidis albus (skin coccus) is found in the skin with such regularity that the latter situation may, for all practical purposes, be regarded as its natural habitat; and our methods are not successful in reaching those bacteria in the depth of this structure.

It has been proven that the use of permanganate of potassium and oxalic acid in disinfecting the skin reduces the danger of infection from this source to a minimum.

SYNOPSIS OF METHODS USED IN MAKING THESE BACTERIOLOGICAL EXAMINATIONS.

The patient is prepared for the abdominal operations by baths, and shaving of the abdomen and symphysis pubis. For one hour previous to the operation, a piece of sterilized gauze, soaked in a 1-5000 aqueous solution of bichloride of mercury, is applied over the whole abdomen. On the operating table the following steps in disinfecting the field of operation are carried out:

1. The abdomen is cleansed with distilled warm water and oleine soap, particular attention being given to cleansing the umbilicus.

2. A thorough washing with absolute alcohol.
3. A warm saturated solution of permanganate of potassium.
4. A warm saturated solution of oxalic acid.
5. A warm sterilized salt solution, 0.6 of 1 per cent.
6. Squibb's ether.
7. 1-1000 warm aqueous solution of bichloride of mercury.
8. And finally, the whole abdomen is well washed with sterilized salt solution.

The abdomen is then covered with gauze and towels which have been sterilized with steam heat, and preserved in a three per cent. aqueous carbolic acid solution, and washed out in warm distilled water before being applied to the abdomen.

The incision is closed as follows:

1. The peritoneum is brought together by a continuous catgut suture, in order to avoid the infection of the peritoneum from the skin by means of the skin-stitch.
2. The skin and muscular surfaces are brought together by deep silkworm gut and superficial silk sutures.
3. The wound is covered with a mercurialized solution of celloidin 1–30000. A piece of sterilized gauze is then placed over the incision, just large enough to cover it. This is saturated with the mercurialized celloidin, and then sprinkled with iodoform and boric acid 1–7. Over this a piece of gauze, large enough to protect the incision on all sides, is applied and covered with the mercurialized celloidin, and the iodoform and boric acid again used. Finally several layers of sterilized absorbent cotton are applied and then the scultetus or many-tailed bandage is adjusted. The gauze, which is applied as directed, is cut in two sizes, viz., the piece that immediately covers the incision is 19 × 8 cm., and over this is placed the larger piece, 19 × 12 cm.

To remove the protective dressing without discomfort to the patient it is generally necessary to soften it with a piece of absorbent cotton, thoroughly saturated with distilled water, and in addition to occasionally wet the gauze well with ether and it can then be readily peeled off the abdomen.

In preparing the perineal cases, the bowels are well opened and douches are given of a litre of a 1 to 2 per cent. aqueous solution of carbolic acid, once daily for two days prior to operation and again on the morning of the day of the operation.

On the operating table the following details are carried out:

The external genitalia and vagina are thoroughly washed with warm distilled water and oleine soap, and the hair thoroughly removed from the labia and around the anus.

The vagina and external parts are washed with one-half litre of a warm 1-1000 aqueous solution of bichloride of mercury, and with warm distilled water. A piece of sterilized gauze is then applied to the parts, well up on the abdomen, covering also the perineum and buttocks so as to protect the ligatures from infection during the operation. An aperture is cut in the gauze of sufficient size to admit of the necessary manipulations.

The stitches in the abdominal cases are removed on the seventh to eighth day following the operation. The stitches in the perineal cases are removed on the seventh day.

Results.—An examination of these cases gives the following result:

Stained smear cover-glass preparations showed bacteria in all cases (three not examined microscopically). In some instances only a few were seen; particularly was this true of those preparations made from the silkworm gut sutures. The cocci were almost always to be found within the polynuclear leucocytes, and when they were numerous they were found filling the cells (leucocytes), and their morphology was like that of the gonococcus. The polynuclear leucocytes were always present in great numbers, and many with fragmented nuclei.

Analysis of cases:

Staphylococcus pyogenes aureus and the staphylococcus epidermidis albus were associated on one or two stitches. On the remaining sutures were the pure staphylococcus epidermidis albus	3 cases.
Staphylococcus pyogenes aureus on every suture associated with the albus	2 “
Staphylococcus gilvus	1 “
Staphlyococcus gilvus and albus	2 “
Streptococcus pyogenes with staphylococcus epidermidis albus	1 “
Streptococcus pyogenes	3 “
Total cases	12

The remaining 33 cases gave pure cultures of the staphylococcus epidermidis albus, and the organisms varied in number, according to the moisture of the suture, and the suture material employed.

Examination of two cases was made the following day after the sutures were removed: One was a case of extra-uterine pregnancy, and the other of an adherent right ovary. Both of these cases gave the staphylococcus pyogones aureus, and the organisms were pathogenic for rabbits. After six days inoculation in the ear vein .5 cc. bouillon cultures 24 hours old, the rabbits died with characteristic lesions, and the organisms were recovered in pure cultures.

Six rabbits inoculated with the staphylococcus epidermidis albus (skin coccus) from six different sources (sutures in abdominal cases) were without positive results. The dose varied from .5 to 1 cc. of bouillon culture 24 hours old. One rabbit died after two weeks, but nothing was found at the autopsy, and no growths from the inoculations made from the organs. The rabbits invariably looked and seemed ill, but they recovered.—*Johns Hopkins Hospital Bulletin.*

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SELECTIONS.

MANAGEMENT OF THE NEW-BORN INFANT.[1]

By Floyd M. Crandall, M.D., New York.

The subject of this paper, lying as it does on the border-line between two departments of medicine—obstetrics and pædiatrics—has, as a natural result, received very inadequate attention. Most works on diseases of children contain no reference whatever to the management of the healthy new-born infant, and but slight attention is given to the numerous ailments and disorders of the first two weeks of life. Works on obstetrics, while they contain numerous scattered references to the infant, are chiefly concerned with the mother, and rarely give connected instructions upon the important matters pertaining to the child. It is a frequent complaint that mothers and nurses follow the physician's directions regarding medicine, but pay no heed to his instructions concerning diet and the details of management. This is usually the doctor's own fault; for while he gives definite orders regarding treatment, his instructions regarding management are vague and indefinite, chiefly because his ideas are vague and indefinite. Clear-cut and definite directions upon any subject will usually be followed faithfully, especially if written.

As my professional experience has been to a considerable degree in these two departments, my attention has been frequently called to the improper treatment which the infant frequently receives. I have ventured to present it to-night, therefore, not because there is anything new or remarkable to offer, but because it is a subject of interest to the general practitioner which is seldom discussed in a connected and compact manner. It has seemed almost impossible for writers who have attempted the subject to confine themselves to their text. In an article upon the new-born infant, recently published in a series of monographs, the writer passes from tying the cord to dentition, both temporary and per manent. This paper is restricted to conditions arising during the first fifteen or twenty days of life.

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[1] Read before the Society of the Alumni of Bellevue Hospital, Feb. 3, 1892.

During the progress of labor the interests of the child are to be considered in various ways. General discussion on the use of the forceps is not within the province of this paper. To the child I am convinced that they are less dangerous than ergot. Ergot babies are blue babies, and the more the ergot the bluer the baby. A physician, living in a locality where public opinion is intolerant of instruments, who has had considerable experience with ergot, recently expressed to me very strongly the same opinion. From a study of a considerable number of birth-palsies, I have been led to the belief that forceps are a less potent factor in their production than prolonged and tedious labor. There seems to me little room for doubt that instruments in the hands of a reasonably judicious man are less dangerous to the child than the continued compression of the head attendant upon labor prolonged in the second stage, or a prolonged first stage, when the waters have broken.

The vaginal douche before delivery is also a matter of importance as regards the child. With ordinary precautions it can do no harm, and may save much trouble. A vaginal discharge, even when apparently simple, may be the cause of ophthalmia, and is sometimes the source of serious general septic infection of the child. The douche should certainly not be omitted when the slightest purulent discharge is present, and should be repeated at intervals sufficiently short to insure cleanliness of the parturient canal.

Asphyxia may be the result of premature separation of the placenta, certain morbid conditions of the mother, weakness of the child sufficient to prevent respiratory action and expansion of the lungs, or obstruction of the respiratory passages by some foreign substance, but the most common cause is doubtless long-continued compression of the head. When not due to actual organic lesion of the brain it appears under two general forms. In one the head is blue and turgid, the face puffed and swollen, the lips are livid, while the body is of a lighter hue. The heart may usually be heard beating and sometimes can be felt by the hand, the rate being usually slow. Under these conditions the possibility of resuscitation is good. If, on the other hand, the surface is pale and shrunken, the limbs flaccid and the muscles without tone, the prognosis is bad, and whatever is done must be done quickly. Fortunately, the infant tolerates the condition of cyanosis better than the adult, probably from the comparatively low grade of oxidation to which the blood has been accustomed. As long as cardiac pulsations can be detected by ausculation, efforts at resuscitation should not be abandoned. If the child fails to breathe, the throat should be cleared of mucus by the finger, when one or two slaps upon the back or a sprinkling of cold water are usually sufficient to induce respiratory movements. If this fails, the application of alcohol or whiskey to the chest may prove efficacious. If the child still fails to breathe, inflation of the chest by means of a catheter passed through the glottis is often effectual, and for this purpose the Mercier catheter, with its peculiar elbow, is admirably adapted. We are told that attempts to force air into the lungs without elevation of the epiglottis are futile. Practically, I have had better results by forcibly blowing into the mouth of the child, a thin handkerchief being spread over the lips and the nostrils being compressed, than by Sylvester's method of artificial respiration. Perhaps the air all goes into the stomach, but I certainly know that I have seen respiratory movements induced by the procedure. As I have thrown the head well back, the œsophagus may have been sufficiently compressed between the vertebræ and larynx to prevent the entrance of air into the stomach. The child is apt to be so relaxed and flabby that little or no expansion of the chest is gained by Sylvester's method. Marked results sometimes follow the alternate dipping of the child into hot and cold water, as described by Playfair. It is a great mistake to allow the child to lie unprotected from cold. If it is evident that prolonged efforts are to be required, the child should be placed in a bath of warm water and not removed until respiration is established. This maintenance of the vital heat, it seems to me, is a matter of the utmost importance.

I have recently in a single case had a satisfactory result by the method of inflation described last year by Dr. Forrest. The child is placed in hot water and the head is thrown backward so as to throw the vertebræ of the neck forward. The hands are drawn up and pressed against the sides. This compresses the œsophagus between the larynx and vertebræ, and at the same time the mouth opens. The physician then strongly blows into the mouth of the child. The head is then thrown forward and the arms are brought down to the side so as to compress the air from the lungs. The point of importance is the compression of the œsophagus, preventing the entrance of air into the stomach.

Under normal conditions, when the child is born the eyes should receive the first attention. They should be carefully washed with a boric-acid solution before the cord is tied. I have never abandoned the old Emergency Hospital practise in this regard, and have never regretted the slight trouble it costs. It is very easy to order a saturated solution of boric acid, or to carry a little powder from which a solution may be quickly made. It is placed in a cup with a small, soft handkerchief, or a few squares of cloth ready for use.

I now rarely use nitrate of silver. According to Credé's method, a drop of a two per cent. solution (ten grains to the ounce) is placed in each eye. The reaction is often severe, and as a routine practise seems to me entirely unnecessary. In case of purulent vaginal discharge it should invariably be employed, but, as a rule, thorough use of the boric solution is sufficient. The satisfaction of having no ophthalmia to deal with would repay much more trouble than these simple measures cost. The necessity for prompt action when ophthalmia is present, and the method of treatment by silver, cold, and perfect cleanliness, is too well known to require comment.

While there is no necessity for undue haste in tying the cord, it is best to do so as soon as the eyes have been bathed. I have tried different lengths and have found a cord of about an inch and a half most satisfactory. I have also tried various forms of dressing and have found nothing more satisfactory than the time-honored square of soft cloth cut in the center. Charred cloth, although recently commended by a high authority, in this day of antiseptics is a relic of barbarism. Cotton is better than linen and should be rendered antiseptic by being soaked in a sublimate solution and dried. As the fluid of the cord exudes rapidly during the first few days, the dressing becomes damp and should be changed every day. There is no need whatever of odor about the cord, and there will be none if it is kept clean and dry with powder, which for this purpose should contain salicylic acid. It will leave a better navel surface and will fall quicker, the average time being about the fifth day. The scar should be healed by the tenth day. With wet dressings, falling of the cord is usually later. The same is true with oily dressings, which some prefer. They are less cleanly and permit more odor.

The scar should be kept clean and be dressed with the same powder. If a so-called umbilical polypus forms, it should be removed by means of a tight ligature. Smaller masses of granulation should be cut down with nitrate of silver and dressed antiseptically. The antiseptic care of the umbilicus can not be too strongly insisted upon. Simple moist antiseptic dressings or, still better, antiseptic powders are preferable to ointments.

The various diseases at and about the umbilicus are extremely rare when proper antiseptic treatment has been carried out. They require active surgical treatment and are beyond the scope of this paper. Tetanus neonatorum, now known to be of microbic origin, is happily a rare disease in this city, and will probably never occur under strict antiseptic management of the umbilicus and of abrasions upon the child's body.

The radical changes which take place at birth should not be forgotten. The child is suddenly transferred from an unvarying temperature of 100° F., where surface evaporation is impossible, to a varying temperature twenty degrees to forty degrees lower, where evaporation from surface and lungs is constant and where it must rely wholly upon heat generated within its own body. It is wonderful that such a change is as well tolerated as it is. We should certainly do nothing to reduce the vital forces, and should take every precaution for preserving the vital heat. The child should be removed from exposure as soon as possible and wrapped in a warm flannel blanket.

It is best not to put the baby into the bath-tub at first. The *vernix caseosa* is soluble in fat, which should be employed for its removal. An animal oil is best, and every nurse will tell you that lard removes it more readily than any other substance. After thoroughly anointing every portion of the body, especially the folds and creases, the oil should be wiped away with a soft towel, a sponge, with a little warm water and soap, being used in places. On the following day, when the child has become more accustomed to its new surroundings, a more thorough bath may be given, but it is best not to use the tub until the cord has fallen.

Absolute cleanliness throughout the whole period of infancy is of the most vital importance to the well-being of the child. The daily bath should be omitted only for the most serious reasons. The use of powder is a necessity, but is often overdone, the nurse depending upon it rather than upon care in drying the surface. Some powders are irritating and cause eruptions. Rice powder does nicely; starch is often improperly prepared; lycopodium is all that some skins will bear, and it may be advantageously added to most powders. If there is excoriation, two per cent. of salicylic acid or five per cent. of boric acid may be added. Salicylic acid is especially adapted to such use, and in some conditions, as for the cord, may be employed in the strength of twenty per cent. to eighty per cent. of starch. For ordinary purposes the compound talcum powder has been the most satisfactory preparation I have used.

The napkins should be changed as soon as soiled, even if it is every hour, and the child should not only be dried, but washed with water. Some nurses dry the napkins and use again without washing. Erythema is almost certain to follow such practise. In treating this disorder, it is best to question upon these points, and also as to the method of washing the napkins. If washed with strong soda or harsh soaps, without thorough rinsing, they will irritate the skin when wet and prolong the disorder, which is at best rebellious to treatment.

The parts should be very gently washed with water and perhaps a little borax, but no soap. If mild, a dusting powder containing salicylic acid or oxide of zinc may be used. If there is excoriation or much discharge, the powder may form into little masses and irritate. On the whole, I have obtained the best results from an oily preparation, which may not only be curative, but protects from discharges. The following, proposed by Fox, has been very satisfactory: ℞ Acidi salicylici, gr. x.; bismuthi subnitratis, ʒ ij; cornstarch, ʒ jss.; ung. aq. rosæ, ad ℥ j. M. In some cases boric acid, or zinc oxide, in ointment with resorcin, seems to be more efficacious.[1]

Before the child is dressed it should be inspected by the physician, and any birth mark or abnormality had better be reported to the father or some friend. Nurses are inclined to make capital upon such matters at the expense of the physician, using a discovery of some abnormality as proof of their superior knowledge of infants. The average male child, according to Dr. Smith's observation, weighs seven pounds eleven ounces; the average female, seven pounds four ounces. During the first three days there is usually a loss of weight, which has been regained before the end of the week. If the child does well, it should gain an ounce a day to three months, the original weight being doubled at six months and trebled at one year. The average length is nineteen inches, which is doubled at four years. The temperature at birth is 100°, which soon falls to 98.6° and then returns to 99. The pulse is about 130, which may be increased twenty or thirty beats by crying or decreased ten or fifteen beats during sleep. Even in perfect health the pulse is often irregular and is practically of no value as a symptom. The respirations are about 44, and fall to thirty at one year. The eyes are almost invariably of a greenish or bluish gray color, and no opinion can be formed at birth as to what their permanent color will be. The pupils are large and sensitive to light. The auditory canal, owing to swelling of the mucous membrane, is usually closed, and there may be a slight discharge, which might mislead the unwary. The abdomen, owing to the frequency of digestive disorders in infants, is an important region. The peculiarities in the relations of the abdominal organs are due chiefly to the great size of the liver, which displaces the stomach and colon to the left, the cæcum being extremely variable in position. The sigmoid flexure is long, sometimes reaching well into the right iliac fossa, and is the cause in some instances of persistent constipation. The bladder is almost wholly an abdominal organ, and its detection above the pubes does not necessarily mean undue distention.

While the physician is rarely consulted regarding the clothing of the infant, it is a subject upon which he should have some knowledge. Tight bands and waists are fortunately being superseded by more rational methods of dressing, though but slowly. The unfortunate infant is bound about the chest and waist by layer after layer, while the arms, legs and neck have but half the covering. Each layer has its own array of buttons and safety pins always at the back. The baby protests, and a new reef is taken in his bandage, already too tight, and he is put back in the cradle to lie upon the same buttons, safety pins and lumps he has been complaining of. The Gertrude suit, of which so much has been said in *Babyhood*, is a vast improvement over old methods. The original suit has been considerably modified and improved, and does away with the bands and waists and all constriction about the body.

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[1] A thin cold poultice of powdered slippery elm sewed up in a bag of thin muslin will heal the sore parts very quickly. Several poultices, of course, are needed.—Ed.

The band for the baby as well as for the mother is a disputed point. I can see no real objection when properly applied, but several advantages in a light flannel band during the first few months. It should be four inches wide, without a hem, and long enough to go once and a half about the body. Pieces of tape fastened to one end make a better fastening than pins. The shirt should be cut high in the neck and have long sleeves. Flannel should be used, for it is a necessity in this climate. The Jaeger flannel is by all means the best. It is rare that it cannot be worn next the skin. In hot weather flannel should still be used, the thinnest possible being employed. The napkins are usually too thick and bungling. Soft cotton cloth is the best material. They should be cut a yard long and half a yard wide, and folded once so as to make two thicknesses, the napkin when ready for use being eighteen inches square, If thicker and larger they are uncomfortable and may distort or deform the child. Rubber napkins and shields are objectionable, from their tendency to overheat the parts. They are only admissible for short periods or when traveling.

The stockings should be long enough to fasten to the napkin, and should always be kept on the feet. The outer garments, one of which should be of flannel, should not be so long and heavy as to obstruct the limbs. All the clothes should be opened in front.

I need not here urge the importance of breast feeding, but would urge more careful attention to the numerous details in the care and management of the breast, neglect of which deprives many children of the food to which they are justly due. The breast should receive attention at least six weeks before the birth of the child. Cracking of the nipples is to a large degree a preventable misfortune. The most efficient preventive measure is the gentle drawing out and manipulation of the nipple night and morning for several weeks before the beginning of lactation. Certain medicinal applications may be made with advantage at the same time. The usual application of astringents frequently fails utterly. I have seen a primipara who had faithfully applied solution of alum, borax and alcohol for two months obliged to stop nursing entirly on the fifth day because of deep fissuring of the nipples. They were certainly tough —as tough as sole-leather ; and, like sole-leather, when pinched, bent and squeezed, they cracked. They were not pliable ; but pliability is as necessary as toughness. It is to be gained by frequent manipulation and the use of an oil. The best oil in my experience is lanolin, with a little cold cream added (one part to three) to render it less waxy and more readily applicable. It should be gently and thoroughly applied after each application of the astringent to counteract its tendency to stiffen and harden.

Both the nipple and the mouth of the infant should be washed with plain cool water, to which a few drops of listerine may be added, before and after each nursing. Decomposing milk on the nipple excoriates and favors fissuring; in the mouth of the child it irritates and forms a culture medium for bacteria. Without this care, germs and spores which have lodged on the nipple and in the mouth are carried into the stomach during nursing and may develop serious digestive disorders.

Fissures, when they occur, try the physician's resources to the utmost. Not to enumerate the scores of drugs that have been proposed, I would simply say that on the whole I have had the most satisfactory results from the use of dry tannic acid. The nipple is cleansed with boric-acid solution and dried and the tannin dusted well into the fissures. It should be repeated after each nursing. It forms a coating that does not readily come off, and relief is usually experienced at the next nursing. The nipple should be affored all the rest possible, and a shield should be used if practicable.

Sometimes, in addition to the fissures, or even when no fissure can be detected, the whole nipple becomes eroded and extremely sensitive. For this condition balsam of Peru is very effectual, or a one-per-cent. ointment of resorcin. In other cases there is a hypersensitiveness far out of proportion to the apparent seriousness of the fissures or erosion. The mother falls into an extreme nervous condition, and looks ahead with apprehension to every nursing. I saw a marked case of this character last year. The mother was anxious to nurse her child, but would fall into such a condition of nervous excitement before every nursing that bottle-feeding seemed inevitable. An application of a four-per-cent. solution of cocaine on a piece of cotton for five minutes was finally tried, and relieved the pain. The intervals of nursing were extended as far as possible, and the cocaine used each time. The nipples were washed before and after each nursing and balsam of Peru applied. The mother was reassured, the strength of the cocaine was reduced, and in a week she was nursing the child without serious discomfort, and continued to do so during the summer.

For various reasons, nursing should be discontinued from a breast in which pus has formed or is forming. In mastitis, or any condition accompanied by fever, the constitutional disturbance alone often renders nursing impossible.

Unless the mother is especially exhausted, the child may be put to the breast at the end of four or five hours. During the first two days six hours is a sufficiently short interval for nursing. The child will get all the breasts contain, and will obtain no more by frequent attempts. I can not say that I never give anything but the breast during the first two or three days. The child gets very little from the breast during the second day, and the stomach must become empty. A baby will wail and cry and show every evidence of hunger, and will drop quietly to sleep upon receiving a little warm fluid. If it is restless and crying on the second day, you may be quite sure that the nurse will give it something before night—it may be milk, broth, gruel, syrup or sugar. It is better for the physician to prescribe what shall be given.

I have seen no bad results from weak oatmeal water. You thus give water that has been boiled, with sufficient nourishment to satisfy the scruples of the mother and nurse. But let the nurse feed indiscriminately with the score of things that tradition demands, and you will find about the fourth day that the family has been awake with a crying child. The bowels are usually loose, the passages being of bad odor, and perhaps greenish. With a mild laxative and exclusive breast feeding, the symptoms usually disappear in a few days, but the baby is subject to attacks of colic for a much longer time, and may have formed the pleasant habit of lying awake and crying at night.

Sometimes, I believe quite frequently, the mother's milk is too rich in fat during the first two or three weeks, causing colic, indigestion and irregular bowels. Order outdoor exercise for the mother, increase the amount of fluid she takes and decrease the meat, for proteids in the mother's diet increase the fat in the milk. Give the baby a teaspoonful or two of Vichy water before each nursing, and the indigestion will probably disappear.

The most important matter in this whole subject of breast-feeding is regularity. It is even more important than in bottle-feeding, for the breast milk changes decidedly according to the frequency of nursing. If the interval is too long, it becomes thin and watery ; if too short, concentrated and rich and causes indigestion. The first week is not too early to begin the formation of regular habits. If the child is asleep, wake it when the time for nursing arrives. It will soon form the habit of waking at regular intervals, and will go to sleep as soon as the nursing is finished. Above all things, warn the mother against continuous and everlasting night nursing. It wears on the mother, impairs the milk and ruins the digestion of the child.

A discussion of the subject of artificial feeding would occupy far more space than this paper will permit. To state the matter briefly, I would feed a child of average weight half an ounce of food every four hours during the first two days, soon increasing to an ounce every two hours, and an ounce and a half at the end of the second week. With one feeding between eleven at night and seven in the morning the child receives ten feedings a day during the first three months. As to the composition of the food, let it be cow's milk by all means. Allow the milk to stand in a bottle or pitcher for two hours and pour off the upper half. For the first feedings take of this rich milk four parts, lime water one part, and water seven parts. After a few days the milk may be increased and the water decreased. In warm weather the milk should be sterilized.

Urine is usually passed during the first twelve hours, and thereafter about an ounce is passed ten or twelve times a day, ten ounces being the normal average amount for the new-born infant. It is at first cloudy from the admixture of epithelial cells and uric acid and of very low gravity (1.003 to 1.006). Later it becomes clearer and pale, but the gravity continues low during childhood. When the urine does not pass, the distended bladder may be readily felt, as it lies very high. Usually hot applications over the hypogastrium, a sprinkling of cold water, or a warm bath are sufficient to start the flow. The catheter is very rarely required, and should be used only as the last resort.

The bowels usually act within a few hours after birth, the passages during the first two days, and sometimes longer, being greenish-black in color and tarry in consistency. If there is no passage, a teaspoonful of sweet oil is often sufficient, to which a few drops of castor oil may be added. In certain cases constipation is obstinate and persistent, and is due to an excessively long sigmoid flexure. In such cases a daily enema may be required until the child is several months old. Constipation is occasionally present from the first, the passages being hard and dry; more frequently it is acquired.

The treatment is often discouraging. The attention must be directed first and chiefly to the milk which the child receives, whether it is cow's milk or breast milk, and any error in digestion should be corrected as far as possible. Give plenty of cool water. This, I believe, is very important, for the infant usually requires more fluid than it obtains in the milk. Instruct the nurse to gently massage the abdomen daily, not by simply rubbing the surface, but by grasping the abdominal wall with the flattened hand and causing it to move upon the bowels beneath. If these measures fail, try a small soap suppository at the same time every day, or in more extreme cases part of a small-sized glycerine suppository, or half a teaspoonful of pure glycerine by syringe. Drugs should be the last resort. Among these, cascara has, on the whole, served me best, but sometimes fails completely. Two drops of cascara cordial may be given twice a day as the initial dose, to be increased if necessary. When the passages are white or pasty and the child does not thrive, a few grains of phosphate of soda, given three times a day, often yield most satisfactory results. It may be added to the milk if the child is bottle-fed. Whatever drug is given, an attempt should be made to reduce the dose very slowly, relying more on diet and other measures. Mild measures at first are often sufficient, but if the bowels are neglected during the first few weeks a habit of constipation may develop which will be very hard to break.

Two errors are common in the treatment of chronic constipation. The first is reliance on a single measure—a single article of diet, a single mechanical measure, or a single drug. No one of these is of itself sufficient if the case is obstinate. The diet must be corrected and the attack must be made from several points at once. The second error is the attempt to cure a continuous and persistent condition by intermittent and spasmodic treatment. No matter how good the treatment, it is sure to fail unless persistently applied.

Jaundice in the infant, as in the adult, is symptomatic of numerous conditions. In the vast majority of cases it appears on the second or third day without assignable cause, continues about a week, and is unaccompanied by symptoms. The sclerotic is not discolored, the urine does not stain, and the stools retain their normal color. In rare instances acute obstructive jaundice marked by the usual symptoms occurs during the first week. The cause of the disorder has not been satisfactorily explained. There may be truth in the theory of Quincke, which attributes it to non-closure of the ductus venosus which permits portal blood containing bile pigment to pass at once into the general circulation. As the condition naturally disappears it rarely requires treatment. The clothing should be investigated, but it is extremely doubtful if bands could be so tight as to cause mechanical congestion of the liver. If the bowels are not free, gray powder is, perhaps, the most appropriate cathartic.

Thrush is a disease of young infants and marasmic children. It is rarely seen in healthy children when proper cleanliness of the mouth and nipples has been maintained, for it does not develop on a perfectly healthy membrane. Digestive disorders, while common in connection with thrush, are not necessarily a part of that disease, but result more from the swallowing of acrid secretions than from actual extension of the thrush. It is best combated by an alkaline wash. Borax is a time-honored remedy, and a good one. I have seen better results by adding to the mixture an equal amount of bicarbonate of sodium. Honey or syrup should not be used as a vehicle, for their decomposition adds to the disease. A simple solution in water is best, to which a little glycerine and tincture of myrrh may be added. Gentle but thorough removal of the exudation should be practised three times a day by means of a soft cloth saturated with the solution and wrapped on the finger or a lead-pencil. Unless this is done with extreme gentleness, more harm than good will result. If the disease is localized, the spots may be touched to advantage with a two per cent. solution of sulphate of copper.

Colic is most common between the second and fourth months, but not infrequently appears during the first week, and may be severe and very troublesome, the attacks being periodical, with a tendency to recur at the same time each day. The causes and preventive treatment have already been considered. It seems sometimes almost impossible to prevent it and treatment for its relief is demanded. The feet will usually be found cold, and should be made warm at once. This simple precaution is sometimes followed by relief of the pain. Heat should also be applied to the abdomen, the warm hand of the nurse sometimes being sufficient. A little plain warm water may be given, to which peppermint may advantageously be added. Three or four drops of rhubarb and soda mixture in a teaspoonful of warm water is extremely effective. Aniseed cordial (elixir anisi) is frequently used, and is quite efficient. It contains twenty-five per cent. of deodorized alcohol. Dalby's carminative, so largely used, it should be remembered, as commonly dispensed, is an opium mixture of half the strength of paregoric. Equal parts of lime water and cinnamon water, or equal parts of camphor water and compound tincture of cardamom, are effective mixtures. The mother should never be allowed to suppose that she can use paregoric for these attacks. The temptation to overuse it is altogether too great.

So little is said of snuffles in the text books, except as a symptom of syphilis, that many a young practitioner has been worried by a simple and very common disorder. Cold in the head is common in infants, and is more serious than in older children. Frequently it amounts only to snuffling or rattling, and perhaps sneezing without much closure of the passages. It cannot become very severe, however, without preventing nursing by obstructing the breathing, and this is the serious aspect of the disorder.

Syphilitic coryza begins with a watery, somewhat acrid discharge, which soon becomes muco purulent, is frequently streaked with blood, and forms excoriations and thick scabs upon the lip. It persists and becomes steadily worse, and is rarely present for any length of time without other syphilitic manifestations. Simple coryza rarely continues longer than a week or ten days; the discharge is not as acrid, but frequently becomes so thick as to wholly occlude the nasal passages, which are comparatively small in the infant.

Treatment, when the disease is mild, consists in applying warm camphorated oil over the bridge of the nose and introducing a little cold cream into the nostrils with a camel's hair brush. In more severe cases the nostrils must be as thoroughly cleaned as possible with a brush or piece of cotton wrapped on a probe, or an attempt may be made to gently syringe the nostrils with Seiler's solution, after which the cold cream may be applied. Gentleness here, as in treating diseases of the mouth, is of the first importance.

Bronchitis at this early age is an extremely serious disease, for if marked it virtually means broncho-pneumonia. The term used by some of the older writers—suffocative catarrh—expresses very well the clinical aspect which the disease is inclined to assume. Treatment does not differ materially from that of the same disease in older children.

Bronchitis is important also from another point of view. In a recent study of congenital heart disease, I found that a large percentage of the cases suffered from bronchitis during the first week. The fœtal openings of the heart and vessels do not fully close until the seventh or eighth day, and it has been suggested that bronchitis, by causing pulmonary obstruction, may be a factor in causing their continued patency. Every precaution should certainly be taken to prevent the disease, and it should be removed with the greatest possible dispatch.

Cerebral hemorrhage, due to venous congestion and rupture of the capillaries of the pia mater; the various forms of obstetrical paralysis; hemorrhages from the various cavities; trismus neonatorum—are all serious conditions of great interest, but their consideration is prohibited from lack of space.

Numerous minor ailments or abnormal conditions occur which require attention. Cephalæmatoma is a collection of blood commonly subperiosteal. It forms a tense, somewhat elastic tumor, situated, in the great majority of cases, over the right parietal bone. Unless evidence of suppuration appears, it should be let entirely alone, for it rarely happens that the blood is not absorbed.

Swelling of the breasts is sometimes marked and causes considerable discomfort. They should be simply protected from pressure. Sometimes warm camphorated oil very gently applied seems to give relief. If suppuration occurs, which is rarely the case, they should be treated like any abscess.

If vomiting of blood occurs, the breasts should be examined, for a surprisingly large amount of blood may flow from a fissured nipple. Congenital teeth are not, as a rule, attached to the bone and soon loosen and fall. They should be at once removed. Vaccination, unless there is some definite reason for haste, had better be postponed until the child is at least six months old. It does not "take" well before that age, and it may be necessary to repeat the operation several times.

The baby may be wailing and puny, with low vitality and apparently little hold on life; the asphyxia may be deep; the convulsions long and severe; the indigestion obstinate, and yet the case may not be necessarily hopeless. In no condition is the truism that while there is life there is hope more true than in that of early infancy. Vigorous and healthy children not infrequently develop from the most unpromising infants. Many a strong man is to-day engaged in the active affairs of life whose first days promised nothing but speedy death. While an infant breathes it is never wise to wholly abandon hope or relax one's efforts.—*N. Y. Med. Journal.*

THE INFECTIVITY OF TUBERCULOSIS.

The certainty that tuberculosis is an infective disease has for some time been one of the recognized truths of medical science. With the growth of our knowledge of tuberculous processes, since Koch's great discovery of the tubercle bacillus, much infallible evidence has been collected bearing upon this point; and while year by year more and more attention is being drawn to the mode of propagation of tuberculosis by infection, there is still much reason for supposing that more yet remains to be done in this direction. Practically speaking, it is only within the past few years that necessity for preventive methods in regard to the dissemination of the disease has been recognized. As the natural history of the bacillus has been evolved by the patient work of various investigators, and as we have learned, so to speak, its habits and "where it comes from and whither it goes," our task of circumventing its efforts to propagate itself has been much more easy of accomplishment, and for this reason probably correspondingly more successful. It is, however, only fair to admit that the profession generally owes a good deal to the German bacteriologists for their vigorous insistance upon and uncompromising advocacy of the belief in the infective nature of tuberculosis. Even now in Germany, we believe, phthisis is regarded as infective as the zymotic diseases. Cases of pulmonary tuberculosis are treated in the hospital, not in the general but in the fever wards, together with patients who are suffering from scarlet fever and other similar acute infective disorders. Moreover, in the German prisons rules have been formulated forbidding the reception of phthisical prisoners, and if by some means a prisoner suffering from this malady has been retained in a cell, the earliest opportunity is taken to have him removed, while the most elaborate processes of disinfection are carried out in order to prevent the cell from becoming the source of the propagation of infection. All these measures are undoubtedly serviceable, even if not absolutely essential; but at the same time it must be admitted that the profession in this country have scarcely yet conceded the necessity of adopting such advanced methods of prevention as these. Apparently our German confrères recognize no limit to the infectiveness of tuberculosis. Moreover it would seem that they have for some years now acted upon this hypothesis, whereas we are only being educated up to this standard. It is true that within the past few months more active steps have been taken to give expression to their views in this country; the appointment, for example, of the Commission on Tuberculosis—[how very modest this commission must be! We never hear anything of its work]—was undoubtedly a step in the right direction, and there are not wanting signs that the importance of this subject is at last beginning to be recognized in other than professional circles. In this connection, however, it is impossible to dispute that until we are prepared to emulate the example of our German confrères in combating the dissemination of tuberculosis, we cannot expect much assistance from the public in this respect. Half measures in the case of preventive methods against an infective disease can scarcely be held to be of much avail; tuberculosis is either infective or it is not; but if it be so, then no measures can be too stringent for the prevention of its dissemination. This is the proper aspect from which to view the subject, and this is undoubtedly the view which medical practitioners should impress upon the minds of their patients and friends. To show how little the infectivity of tuberculosis has come to be appreciated by the public mind, reference need only be made to the expressions of surprise which invariably greet the propounder of this doctrine among lay persons. Of course the difficulty to be overcome in this matter is that of making the laity comprehend that all sources of infection have not the same characteristics, as, say, those which belong to scarlet fever. The results of the infection of scarlet fever are seen within a few days; therefore the laity can understand that it is infectious; but it is quite another matter to cause them to believe that a disease is infectious the effects of which may take months to develop. Herein, then, there is plainly much scope for enlightenment among those to whom the facts in question would be calculated to be of the utmost service ; and the sooner that a more universal recognition and appreciation of the infectivity of tuberculosis prevails, the sooner may it be expected that some tangible proof of the teaching upon this subject will be available for useful and congratulatory comparison. It may here be noted with satisfaction that the Medico-Chirurgical Society of

Glasgow has memorialized the town council of that city, calling attention to the fact that tuberculosis is now fully recognized as an infective disease, and asking them to take matter into their serious consideration, with a view to the protection of the community from infection. The memorial in question sets forth many convincing arguments calculated to impress those to whom it is addressed, and should undoubtedly lead to active measures being taken under the advice of their medical officers by the Glasgow town council. We have no doubt that if practical recognition of the fact of the infectivity of tuberculosis were given effect to by the various town councils throughout the country by means of resolutions enforcing definite rules, adapted to prevent the dissemination of the disease, much good would be certain to accrue. It is, however, extremely unlikely that these municipal bodies would take the initiative themselves, and hence there is all the more reason that the profession should stir in the matter, and that influential medical authorities should lose no opportunity of representing to them what may strictly be called the urgency of so important a movement in the interests of the public health.—*Canada Medical Record.*

RELATION OF INFLUENZA TO CLIMATIC CONDITIONS AND TO ZYMOTIC AND RESPIRATORY DISEASES.

By C. Roberts, F.R.C.S., Eng.

The borough of Nottingham has issued an admirable colored chart and a series of meteorological tables illustrating the relation of the number of deaths from various causes to the principal meteorological conditions on each day of the year 1891, but without any comments. As there was an epidemic of influenza during the ten weeks from April 22d to June 30th, the chart affords an opportunity of studying the relation of this disease to climatic conditions and the prevalence of other diseases, independently of all preconceived ideas. The chart and tables do the compilers great credit, and their example might be followed with great advantage by other corporations. The meteorological curves do not throw much light on the cause and spread of the influenza. There was a high barometer, with a low and narrow range of temperature and a corresponding rainless and sunless condition, during the seven weeks preceding the outbreak of influenza. During its prevalence there was nothing remarkable in the climatic conditions, except an extreme range of temperature from a maximum of 72° to a minimum of 29°, equal to 43°, from May 13th to 18th, the period of the maximum death-rate from influenza and respiratory diseases. There were corresponding variations in the sunshine, the days of high temperature being very sunny, and those of low temperature sunless. There were ten days with hardly any sunshine at a period when sunshine is most plentiful in this country. There was nothing exceptional in the atmospheric pressure, rainful, or direction of the wind during the ten weeks in which deaths from influenza were recorded.

When we examine the columns representing the number of deaths from various causes, we come on the remarkable fact that influenza usurps to a large extent the place of the zymotic diseases, and anticipates to a great extent the lethal effects of other diseases. The deaths from zymotic disease fall from 101 in the ten weeks before the influenza to 77 during the ten weeks of its prevalence, and to 31 in the ten weeks after it has disappeared. The deaths from respiratory diseases, which were 191 in the first period, rose to 262 during the epidemic, and fell to 78 during the ten weeks following it. The variations of deaths of persons above sixty years follow the course of the respiratory diseases; there were 234 in the first period, 302 in the influenza period, and 147 in the subsequent period of ten weeks. The following table shows at a glance these fluctuations in the deaths. As the epidemic occupied ten weeks, I have arranged the other periods in groups of ten weeks each. The influenza period forms the center group. The population of Nottingham in 1891 was 212,662, and the death-rate during the year 19.3 per 100:

	Deaths from zymotic diseases.	Deaths from respiratory diseases.	Deaths above 60, from all causes.
Ten weeks preceding the influenza, from Feb. 12th to April 23d	101	191	234
Ten weeks of epidemic influenza, from April 23 to June 1st (zymotic 77, influenza 100)...........................	177	262	302
Ten weeks following the influenza, from June 2d to Aug. 9th	31	78	147
Average	103	177	228

From these figures we see that influenza has, as it were, picked out the bad lives from the subsequent period, for if we average the deaths of the influenza and subsequent period we obtain the numbers 104 for zymotic and influenza, 170 for respiratory diseases, and 224 for deaths above sixty years of age, values which give only 3 zymotic deaths in excess of the pre-influenza period, and 21 respiratory and 10 old-age deaths less than that period. Some allowance must be made for the lower death-rate of the summer than the spring months; but making ample allowance for this, it is obvious that the 100 deaths attributed to influenza were not an addition to, or excess of, the normal death-rate, but a mere variation of the name and time of registration of the deaths; and Nottingham as a community lost nothing (except a few weeks' labor) by the invasion of the epidemic of influenza in 1891. If further observation bears out these results there should be little reason for the panic which is spreading everywhere. May it not also help us to new views of the pathology of influenza when we find it supplanting zymotic diseases? My object is not, however, to discuss the pathology of influenza, but to call attention to its incidence, and its relation to other diseases and to the public health, as shown by the admirable chart issued by the Nottingham sanitary authorities, but which has been left for each student of vital statistics to interpret in his own way.

CLINICAL RECORDS.

FIVE CASES OF THE PIN SENSATION IN THE THROAT.

By John Dunn, M.D., Richmond, Va.

Case I.—Miss A., milliner, aged twenty-nine. The patient complains that there is, whenever she "swallows," the sensation in her throat as though there were a pin or the bristle of a brush sticking her. The sensation is well localized and never changes place; is referred to the right side of her throat, upon a level with the deepest part of the hyoid fossa. It is not a surface sensation, but seems to have its seat deep in the throat. This sensation is increased in unpleasantness whenever she catches cold. It never leaves her, although the pin or bristle seems to scratch the surrounding parts more at times than at others. Miss A. has no remembrance of having ever swallowed a pin or a bristle, but, from the sensation, is "certain that it must be the one or the other." She has often swallowed crusts of bread to try to dislodge this pin." The sensation has existed for eight or ten years, and no treatment she has received has been able to relieve her. At times this place must ache, since Miss A. says that it gives her neuralgia down her neck to the collar bone, in the shoulder, and of the scalp behind the ear. She is constantly clearing her throat to remove this "pin." Miss A. is anæmic, and has the appearance of being nervous and overworked. The nose is normal, except that the mucous membrane is too pale, and the middle turbinate of the right side is hypertrophied enough to lie against the sæptum anteriorly. The nasopharynx is clear. The left tonsil is normal. The right tonsil is somewhat hypertrophied at its lower end. The pharynx is normal, except that just behind the posterior pillar on the right side, opposite the lower end of the tonsil, is an area, about two millimetres broad and five millimetres long, which has the appearance of being slightly thickened, is slightly redder than the adjoining mucous membrane, and looks as if it might be subject to some irritation. I made a note of this condition at the time, but in no way connected it with the "pin sensation" felt so distinctly lower down. The laryngeal region was normal, except that there appeared on the right side of the epiglottis a very small, whitish area, to which some little mucus was adherent. There was no demonstrable trouble in the external canal or inner ear. There was no bad tooth. The teeth were examined because of the presence of the neck neuralgia. I took a probe and touched the tonsil of the right side. Miss A. said the trouble was lower. I then touched various points along the left side of the base of the tongue, and each time Miss A. said I had not gone far enough down. I then examined the external neck carefully, and especially the point to which the sensation was referred. Nothing abnormal could be found, except that deep pressure over the skin at one point on the side of the larynx was said to be painful, but there was no sign of inflammation to account for this. There were no enlarged glands. Examination of the lungs revealed some louder breathing than normal. Finally, the part that the hysterical element might play came up before my mind. The sensations, however, were too definite, and the patient was too willing to have anything done for relief, for me to believe that there was not some definite cause for the sensations, which I believed to be plainly reflex. I told Miss A. that I could not find anything in her throat that might cause such a sensation, but if she would submit I would remove everything, as far as I could, that was abnormal in the throat, and that some one of these conditions might be the cause of the trouble. She was willing to submit to anything, and asked me if I would not give her chloroform and cut down on the spot she touched with her finger and remove whatever it was that was sticking in her throat. Speech, breathing, powers of deglutition, etc., were perfectly normal, and I would not leave the impression that there were any symptoms which seemed in any way to threaten life, but what there were were a constant source of annoyance to the patient. The treatment and results were as follows:

September 28th.—Removed the hypertrophied lower end of the right tonsil. The patient said immediately after the removal that the "pin sensation" had disappeared. I feared, however, that the disappearance was due to pain caused by removal. It proved to be so, as the "pin sensation" returned as soon as the cut place was healed.

October 6th.—I passed a horse-hair probang into the œsophagus, well down; opened it and pulled it out. This was done on a hint from an older physician, who took the hysterical view as to the cause of these sensations. Furthermore, her physician told me Miss A. had lateral curvature of the spine, and suggested a connection between the neuralgic conditions of the neck and this condition of the spine. Passing of the probang, however, failed to relieve Miss A.

9th.—Removed with a snare the hypertrophied anterior end of the middle turbinate.

16th.—Pin sensation still present, together with neuralgic tenderness and numb sensations in the parts supplied by the greater and lesser mastoid and auricular branches of the superficial cervical plexus; this sensation at times also goes to the parts supplied by the supra-acromial and supraclavicular branches of the same plexus.

I did not see Miss A. again until December, when she informed me the same sensations were still present. I examined the throat again, and touched with the point of a probe the small reddened area just behind the posterior pillar, at the level of the lower end of the right tonsil. "That is the place," said Miss A. Here, then, in this small reddened area was the origin of the sensations which Miss A. referred to a position in the neighborhood of the lowest part of the hyoid fossa of this side. I took a bent probe and touched various points in the mucous membrane below this inflamed area, as far down as the middle of the hyoid fossa. The resulting sensation was described by Miss A. as being *above* the sensations which originated from the reddened area. "The place is further down still," but as soon as I touched this place, opposite the tonsil, Miss A. would say, "There it is." With the electric tip I cauterized thoroughly this area, with the result that immediate relief was experienced, and this relief lasted until the burned place healed, when the "pin sensations" returned as before. Three times was this whole area burned out with the cautery; each time Miss A. experienced relief until healing took place, after which the "pin would return to her throat." Treatment has furnished absolutely no relief. On April 20, 1892, Miss A. told me that "the same pin" was in her throat, and that she suffered as much as she had before treatment was begun. There is one point of further interest in regard to the case. When this area is first seen it appears to be redder than the surrounding parts, but if it is touched with a probe it immediately becomes of a deep red, and swells from the blood sent to it, so as to be in marked contrast with the neighboring mucous membrane. I can give no explanation as to the cause of this phenomenon.

Case II.—This case came to the clinic in November, 1891, while

Miss A.'s case was still in my hands. The patient, Miss B., aged seventeen years, complained of exactly the sensation in the left side of her throat that Miss A. had in the right—that of a pin or a bristle sticking in it. In the case of Miss B., however, this sensation had lasted only a week, and was referred to a dinner, where she must have swallowed "a pin or something like it." The place of the sensation was again at the side of the throat behind the upper part of the larynx, and was more or less constantly present. Examination of the nose and nasopharynx revealed the picture common enough, where there are adenoid hypertrophies, enlargement of the third tonsil, hypertrophied turbinates, etc. To this it may be added that there were also enlarged tonsils ; but, as these conditions had existed for years, while the pin sensation had made its appearance within a week, they were excluded from the possible causes of the trouble. There was nothing in the hyoid fossæ, nothing in the larynx to give rise to this sensation. I told the patient that perhaps something she had swallowed had scratched the throat, and that the trouble would wear off in a few days ; if not, to return. A week later Miss B. returned, saying that the pin was still there in the same place.

While making a laryngoscopic examination, the mirror was pressed against the upper part of the left posterior pillar. "There is the place !" exclaimed Miss B., and touched with her finger the side of the throat opposite the thyreoid cartilage. Closer examination showed just above the enlarged tonsil on the left side a small "granulation," somewhat inflamed. On touching this with a probe the patient said that that was the place where she felt the pin. When asked, however, to swallow and then put her finger over the spot, she always carried her finger to the side of her throat opposite the thyreoid cartilage, and it was here that she felt the pin sensation when the granulation was touched. The granulation, inflamed, was certainly the cause in this case of the sensation. It was removed, and the patient was told to return after a few days if she was further troubled. She did not return, and the inference is that she was relieved.

Case III.—This case is one of a young man about thirty years of age, brought to me by Dr. Lewis Wheat, of this city. The history is as follows : A few hours before, he had between his teeth a bent pin, which, owing to his suddenly bringing his teeth together, had sprung from between them "down his throat." He was "certain" he had "swallowed it," for he had "looked all over the carpet" and could not find it, and then, too, he had "felt it when it went down." And, besides, he "felt it sticking in" his throat whenever he swallowed. There was no constant pain present ; no pain save a slight pricking sensation on swallowing ; no cough ; no obstruction to the passage of food into the stomach.

The patient, however, persisted in affirming that the pin was in his throat, and would place his finger on the left side of his throat opposite the upper back part of the thyreoid cartilage as the point where the pin was sticking. Examination of the larynx and the hyoid fossæ revealed nothing. (And let me say by way of parenthesis that the best way to obtain a perfect view of the hyoid fossæ, in patients where from oversenstiveness of the supralaryngeal structures, a view of them is shut out, is to make the patient laugh while the examination is being made. The fossæ then open and may be viewed in every corner.) The pharyngeal and rhino-pharyngeal examinations revealed nothing to indicate the presence of a pin. Opposite the left tonsil, between the posterior pillar and the pharyngeal wall, was a small mass of hypertrophied lymph tissue, slightly inflamed, and identical in position with that the cause of the trouble in Case I. I touched this with a probe. "That is about the place," said the patient. To convince him no pin was there, I swabbed the area with a cocaine solution, when after a minute, the pin sensation was gone. A moment later he said the feeling was on the other side of the throat. "The feeling" was, however, too evidently a forced one to need attention.

Case IV.—Dr. R. came to me saying that he had a "bristle in his windpipe." The only symptom was a sensation of something sticking in the throat every time he swallowed. Examination of the pharynx showed a single acutely inflamed granulation of the pharynx opposite the center of the tonsil on the side upon which the "bristle" was felt. This sensation had been present several days. When this granulation was deadened with cocaine, the "bristle" could no longer be felt in the throat. The granulation was pinched with a forceps, and Dr. R. had no more trouble. The point to be noticed is, that the sensation was referred to a point at least two inches below the place from which the sensation originated.

Case V.—Miss M. complained that she had swallowed a pin, which was sticking in her throat, and, as in the preceding cases, the pin was located in the region of the larynx. Examination of the pharynx revealed on the posterior wall an acutely inflamed granulation near the lower end of the tonsil. This was cocainized and pinched with a forceps. The next day Miss M. returned, saying the pin was still in her throat. Examination revealed, just below the granulation I had pinched the day before, a second smaller granulation. This was pinched as the other one had been and Miss M. had no further trouble.

These five cases have been reported because physicians so frequently have patients who have "just swallowed a fish-bone," or a "chicken-bone," or a "pin," which is now sticking in the throat. To the physician's eye there is no urgent symptom—no cough, no difficulty in swallowing solids or liquids, no place painful on pressure—and yet these patients insist upon the presence of the foreign body in the throat, since they "feel it every time they swallow," for their imagination, sharpened by their ideas of choking to death, magnifies any slight abnormal sensation of the throat into a real evil. And, further, it happens sometimes that the physician, although he assures his patient that "it has gone down," has in his mind a great deal of uncertainty as to whether it has or not.

In Cases I., II., and III. the sensation was that of a pin sticking in the throat; to each patient the sensation was definitely localized in the side of the larynx. In the first case, though the probe was used extensively about the root of the tongue, the patient always said "the pin is lower yet," while when it touched the inflamed area, although higher up, it brought forth the exclamation, "There it is!" In the last two cases the sensation could be produced by "swallowing," but the knowledge that the act of "swallowing" would cause the sensation caused the patients to repeat continually this act to convince themselves that the pin was still present.

In Cases II., III., IV. and V. the sensation was due to an acutely inflamed "granulation" of the pharynx. In Case I. the sensation originated in a localized area of the postpharyngeal wall, which area from some cause remained more or less constantly irritated. In all, the sensation could be produced at will by touching with a probe the inflamed areas, or by making the patient swallow. In the first case the nervous element may have played a prominent part. In the third case, Dr. Wheat had some years ago performed laparotomy for a wound of the intestines, and, though the operation was eminently successful, the patient had obtained a more intimate acquaintance with his intestines than is vouchsafed most men, and it made him regard with apprehension the possibility of a foreign body finding its way into them, and thus he was willing to magnify any sensation that would seem to justify his fears.

The reason why in these cases the patients insist that the pin sensation is in the throat at the side of the larynx is probably to be sought in the facts that they know nothing of the anatomy of the throat and that the "pin" is felt only in the act of "swallowing," when the larynx and its adjacent parts are lifted, and there is a general contraction of the muscles at the back of the throat, at which time to the patient a definite localization of the sensation in an unknown region is difficult. These cases seem to show that, in the cases of "pin sensation in the throat," the cause is a definite one and not altogether imaginary; that, in a certain proportion of cases, the cause is to be sought in the neighborhood of the tonsil, and is either an acutely inflamed "granulation" or a hypertrophy in the lymph chain behind the posterior pillars of the fauces of the side upon which the sensation is felt. These cases further show that searching will discover the origin of these sensations, and that when it is found we can state accurately to the patient the cause of the trouble, which will be more gratifying to him than to hear that "it scratched the wall of the œsophagus in going down and all will be well when the scratch heals," or something similar.

A CASE OF HEMICHOREA FOLLOWED BY PARALYSIS (PARTIAL HEMIPLEGIA) IN A CHILD FOUR YEARS OF AGE.

By E. A. Piggott, L.R.C.P. and S., Edin., L.S.A., London.

The following case is of interest, not only as occurring in so young a child, but also as exemplifying the embolic theory in the causation of chorea. The partial hemiplegia, I take it, as clearly indicating cerebral breach of structure, is in all probability dependent upon capillary embolism. For the early history of the case I am indebted to the parents of the child, at which period she was under the care of another practitioner. The case came under my observation only a short time before the development of the hemiplegic symptoms. M. D——, aged four years, the child of healthy parents, suffered more or less from convulsions during dentition, the commencement of which was delayed until she had attained the age of eighteen months. When she had completed her fourth year she was attacked with influenza, which was generally epidemic at the time (March, 1890). During the interval of time between the subsidence of the convulsions synchronous with dentition and the attack of influenza the child enjoyed perfect health. The attack of influenza was succeeded by marked choreic movements in the left upper extremity, the facial muscles on the left side being the next affected; the disease, assuming a decidedly progressive character, ultimately reached the left lower extremity. The muscular contortions were almost entirely limited to the left side of the body, and were often present during sleep, frequently causing the little patient to awake with a sudden start. Locomotion was also interfered with, the left leg being drawn along the ground in walking. A nourishing diet, consisting of milk, beef-tea, eggs, etc., was ordered, and a mixture containing compound syrup of the hypophosphites, combined with small doses of liquor arsenicalis, together with cod-liver oil, prescribed. Under this treatment there was a marked improvement in the choreic symptoms; the improvement, however, was of brief duration. Decided evidence of hemiplegia soon commenced to manifest itself, paralysis of the left facial muscles, partial ptosis, and considerable photophobia, with loss of power in the left arm to such an extent that there was complete inability to grasp any object, the child using the right hand to endeavor to assist the left, finally being unable to lift the arm at all. The bowels were relieved naturally until this date (Oct. 13, 1890). On Oct. 15, I was called to see the patient, as the symptoms were alarming. On arrival I found the following condition, viz.; pupils unequal, left dilated, right contracted, the conjunctiva of the left eye totally insensitive, with diminished sensibility in right conjunctiva; marked trismus, the jaws being firmly closed. Tonic contraction of the extensor muscles of the left arm and forearm and both legs, the left being the most complete. Temperature in axilla 100°; pulse about 120, weak; respiration normal; child groaning slightly at intervals, and moving the head from side to side. A small quantity of liquid nourishment was administered by forcibly separating the jaws. During the progress of the disease, especially after the paralytic symptoms developed, the child was constantly complaining of pain in the head, and would cry out suddenly, frequently awaking from sleep with a scream. Oct. 16th.—The condition to-day nearly approached that of complete coma. Temperature normal; muscular jerkings almost continuous in the left upper extremity, which remained rigidly extended. The fingers were clinched, and the hand drawn back to such an extent that it almost resembled in appearence a complete dislocation at the wrist-joint, both feet being similarly affected, and simulating the condition represented in a case of talipes equino-varus. The bowels were obstinately confined, the urine being passed involuntarily. From this date the patient gradually passed into a state of profound coma, sordes forming upon the lips, with a total inability to take nourishment, death finally releasing the little sufferer on Oct. 23d. A post-mortem examination was not permissible.

The foregoing case, in a great many of its details, resembles tubercular meningitis. Both parents being young and vigorous, there was no reason for supposing the child directly inherited a tuberculous diathesis; doubtless a tendency to brain mischief existed, owing to the convulsions attendant upon dentition. It is also a question what share, if any, the attack of influenza had in the production of the fatal cerebral symptoms.

ATRESIA ANI.

By John K. Murray, M.B., Edin.

A well-developed child three weeks old was brought to me in September, 1891. I found a dimple marking the usual site of the anus, and the fæces passed per vaginam. On passing a probe the fistulous communication could not be found. Under ether, administered by my friend, Dr. Batchelor of Queen's Town, I cut down on the normal site of the anus, dividing the tissues in the middle line to the depth of an inch and a half. I could find no rectal cul-de-sac. The depth of the wound precluded further dissection. To get freer access I partially divided the posterior vaginal wall, and having passed a probe into the posterior fornix vaginæ, I at last succeeded in making it enter the bowel. By inserting my forefinger into the wound I found the point of the probe just a little behind the vaginal wall. I accordingly cut down on it. This was followed by a free gush of fæces. I put a stitch in the site of the recto-vaginal septum and closed the vaginal opening by absorbent wool. A bulbous silk catheter was tied in the rectum. The wound was syringed daily. By the third day no fæces escaped per vaginam. The catheter was removed, and passed into the bowel four times daily. When seen in the early part of March, 1892, it was found that a well-formed anus was present, rather nearer the vagina than in the normal perineum. No fæces have escaped since the third day per vaginam.

In this case the dimple marked the arrested deepening of the epiblastic fold which grows into and becomes continuous with the mesenteron. The high site of the rectal cul-de-sac probably indicates a defect in the development of the mesenteron itself. As regards the operation, the main difficulty was in striking the cul-de-sac, which was not distended by fæces, free egress being afforded by the vagina frequently during the operation. It is recommended by Diffenbach and Barton[1] that, if possible, the cul-de-sac should be detached from the vagina and stitched to the skin. This may be feasible where the cul-de-sac is blind or where it comes low down, but where the cul-de-sac terminates at its communication high up in the fornix vaginæ such a proceeding is difficult, even hazardous. The result in this case shows the tendency of nature to revert to normal channels when such are re-established. The line of force was in the direction of the wound when defecation took place; consequently the healing of the trench-shaped wound formed a natural prolongation of the rectum ending at the skin.

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[1] Medical Recorder, vol. vii., p. 357.

OSTEOMYELITIS OF THE FEMUR—ENCYSTED HYDROCELE OF THE CORD—GONORRHŒAL RHEUMATISM.

By Arpad G. Gerster, M.D., Professor of Surgery at the New York Polyclinic; Visiting Surgeon to the German and Mount Sinai Hospitals.

Gentlemen:—The patient whom I bring before you to-day has been suffering from osteomyelitis of the thigh bone, and is the young man upon whom I performed an osteotomy a week ago to-day. After the operation, when most of you had left the room, he manifested quite serious symptoms of collapse. His pulse was in a very bad condition before the operation, and I therefore completed it as rapidly as possible. There was considerable hemorrhage from the wound, and this came not so much from the soft parts as from the bone.

This operation may serve as a very fair illustration of the way in which all surgical procedures were performed before the invention of Esmarch's bandage. The fact that in the vicinity of the roots of the extremities, that is, in the vicinity of the hip and shoulder joints, an Esmarch's bandage cannot be applied, renders operations here more serious than when they are performed lower down; and, of course, considerable rapidity of execution has to be employed. The surgeon who operates rapidly, and at the same time deliberately, will obtain these results in the best manner. I would state to you, though the statement may seem paradoxical, that in order to perform a more rapid operation, it is necessary to make a very liberal incision and expose the bone rapidly. The bone is then before your eyes and you do not lose time in preliminaries, during which the patient suffers much loss of blood. The prolongation of the incision one or two inches through the soft parts will not increase to any extent the hemorrhage, for it is the oozing from the cancellous tissue of the bone, which it is difficult to arrest, that causes the loss of blood. The quicker you are in reaching the seat of disease the less blood will the patient lose, and the more satisfactory will be the ultimate result.

Let me tell you that not only in this particular field of surgery, but in every department in which major surgical operations are performed, success depends, to a much greater extent than many believe to be the case, upon the quantity of blood saved by the surgeon during the various steps of the operative procedure. Take, for instance, the subject of laparotomy—a subject which is discussed by many persons in this country and abroad, who never received any surgical training—take this subject, and you will find that the disastrous results that follow this operation are not so much due to a disregard of antiseptic precautions, which I do not belittle by any means. as to disregard the principle of not sacrificing one drop of blood more than is necessary. When you see a man explore the abdominal cavity, through a minute aperture, and withdraw a mass containing pus. sometimes very septic pus—a mass which is surrounded and intimately glued and attached to the organs in its vicinity, the bladder, uterus, coils of intestine, etc.—you cannot be astonished that disaster should follow such a procedure. He is working in the dark, he does not see any vessel he has ruptured, and he is neglecting one of the great cardinal principles of operative surgery, by not cutting under the guidance of the eye. I have seen surgeons explore the abdominal cavity, rupturing vessels and occasionally even tearing into the intestine. You are taking great risks with your patient when you are violating this all-important rule of operative surgery, and especially is this true in cases where there is a large quantity of blood associated with contaminating material in the abdominal cavity, both on account of the danger of hemorrhage and septic trouble.

The rational procedure, then, is to open up to view the field of operation, and when you meet adhesions that are too tough to be broken up by the tip of the fingers, put double ligatures around them and divide them, securing each vessel before you cut. By this method, you will have a clean field to work in, will have no secondary hemorrhage, and avoid the necessity of inserting a drainage tube in the abdomen. Very frequently the tube is inserted in the wound on account of the fear of secondary hemorrhage, because it has been observed so often after these operations. A small artery is torn, a clot forms in its orifice, the surgeon sponges the bottom of the pelvis and fails to bring up blood. The hemorrhage has been only allayed; it is apparently at a standstill. The patient is placed in bed, and the pulse under the influence of the returning reaction begins to become stronger. The vital processes are augmented, the various effects of the operation, such as shock, etc., are passing away, and as the action of the heart increases, the hæmostatic influence of the coagulated blood disappears, the plug is displaced and a hemorrhage follows.

The very thing we all wish for, to see the patient react well after the operation, is what brings about the disastrous results. Now, under such circumstances, what is the ordinary practice. The incision was a small one; does the surgeon open up the field of operation and tie a ligature around the bleeding vessel? I ask you this as a practical man. Is that what the surgeon usually does? No. He is again afraid of enlarging the incision and hunting for the bleeding vessel. Styptics are used, compression is employed, the belly is washed out with large quantities of fluid. Occasionally, these measures succeed, and in spite of his surgery the patient may recover.

These secondary hemorrhages are exceedingly dangerous. They generally occur in patients whose vitality is lowered from long continued illness; and unless you are a determined man and adopt the practice of hunting up the bleeding vessels, your patient may die as a result of the direct loss of blood, or the complications arising therefrom. I have mentioned this fact to you in order to illustrate the great importance attached to this neglect. This practice of making a small incision in abdominal operations is based upon the superstition which had its origin in England, and has been transplanted to this country, that the larger the incision the greater the mortality. Now, many who examine this aphorism would accept at once the view that the mortality is in direct proportion to the size of the incision. That this is a fallacy I will prove to you. They say the larger the incision the greater the mortality. Such being accepted as true, what follows? As a natural consequence it means that you should make your incision as small as possible, and thereby keep the mortality of your patients down to a minimum. Though I admit the truth of this statement, yet I deny the truth of the explanation. In what class of cases do you make a large incision? You require a large incision in cases of large, solid tumor, with many adhesions—in other words, in all difficult cases. Therefore the mortality is greater in these cases, not because the incision is a very large one, but on account of their severity. I say once more to you, if you make an incision sufficiently large to see the vessels, you will be able to tie them; if it is too small, you will tear them before you see them and cause trouble. Work, therefore, under the guidance of the eye, and save as much blood as possible. Expose the intestines freely; and by adhering to this principle you will run no danger of secondary hemorrhages, and the mortality of your patients will be diminished.

This is my experience, and this experience is not based on one class of abdominal cases. It involves all forms of operations which come under the care of the general surgeon, such as gunshot wounds, diseases of the intestines, gall ducts, gall bladder, pancreas, liver, etc. I say here with all diffidence that our experience is a wider one; and our judgment deserves more respect and is of greater value than that of those surgeons whose operative work is limited to a single organ in the abdominal cavity.

Now, to return to the case before us on which I operated, as I have already stated. The portion of the wound that was sutured has united, the discharge is moderate in amount, and the cavity looks clean, with granulations springing up all over it. The temperature was 102° F. the day following the operation, but ever since that time it has been normal. This will, however, be a rather tedious case; for we chiseled away a very large portion of the thigh corresponding to the trochanter major, and the cavity will have to gradually fill up with granulations.

The next patient is an infant who has a tumor in close relation with the spermatic cord. I can get no impulse when the patient cries and I cannot trace this well-defined, smooth tumor into the abdominal cavity. The testicles are below in the scrotum and normal; and, hence, I am inclined to assume we have to deal here with an encysted hydrocele of the cord. I will ask the mother to bring the child here again, for there is no hurry about the case, and before I give an opinion I should like to see the patient once more.

I will tell you why I do this. It happened to me in my dispensary practise, many years ago, but I have not forgotten it yet, that a patient with symptoms similar to this one was brought to me, and I diagnosed hydrocele of the cord. There was fluctuation and translucency and I plunged the needle into the tumor, withdrawing some serum. There was apparently still more serum in the sac; I introduced the needle a second time further in another direction, and this time gas escaped. I saw it enter the barrel of my syringe and thought that the instrument was leaking. In order to quiet my apprehensions I told the parents of the the child to take him home and come back with him the next day, which they did. There was a very hard red swelling at the site of the small smooth, soft swelling of the previous day. His temperature was 105° F., he had vomited everything, and had had no stools since. The symptoms of an acute strangulation of a hernia were present.

The child was at once anæsthetized, after having secured the consent of the parents, and when I cut down upon the swelling, I found a coil of intestines which had been pierced by my needle, contained in a sac, the walls of which were in a state of inflammation. The intestine had become adherent to the walls of the sac in several places, and the sac contained a mixture of pus and fæces. In trying to force a diagnosis I had done an injury to the intestine and caused a localized peritonitis in the sac, and, of course, strangulation due to the inflammation, etc.

There is some difficulty encountered in finding the site of the puncture, but it was discovered finally on careful investigation, and was no longer discharging. I released the strangulation, cleansed the intestine and carefully replaced it in the abdominal cavity, doing a radical operation for the cure of the hernia. The patient made a rapid and uninterrupted recovery.

This is an experience that we all encounter occasionally, and it ought to warn us against too great haste in cases in which there is no necessity for haste. If I had any doubts about the diagnosis, and if there were symptoms present which made it imperative for me to decide what was the cause of the trouble, I would much rather chloroform the child at the start, cut down and see what there is, than plunge a needle into the swelling. I beg of you to make a note of this, and you will never regret it.

We have here, as our third and last patient, a young woman who was pregnant and was confined in due time. She has probably had a leucorrhœa, a very common thing during pregnancy, and still has no vaginal discharge. She has had no urethritis, no frequency of urination, but a week or so after confinement a violent inflammation of the wrist joint set in.

Now as you look at this hand you see a dense œdema, a glossiness of the integument, and you notice great functional disability, apparently due to lack of flexibility of the joint, and lack of mobility of the flexor and extensor tendons due to the dense infiltration of all the tissues surrounding the joint. There is no pain, but we have the history of previous vaginal suppuration and of rheumatism which attacked not only this but other joints of the body. What is the trouble here? Is this an ordinary case of rheumatism, or is it something else? It is very difficult to state now what it is, but it was probably one of those forms of rheumatism which are classed erroneously under the head of gonorrhœal rheumatism. I rarely use that phrase myself to designate this affection; and advise you not to employ it, because it pronounces a severe and frequently unjust judgment on many patients who are afflicted with this form of rheumatism. Patients suffer from "gonorrhœal" rheumatism who never had gonorrhœa. In fact, any one suffering from suppuration anywhere (a perfectly harmless and unobjectional urethritis in men or women due to catheterism, which is a very common thing, as you know) is apt to be attacked by this condition. Of course, gonorrhœa does produce the same affection, and the method of infection is the same. It is not the gonorrhœal poison that does the mischief, but the ordinary pus organisms that are always found in gonorrhœa. If it were otherwise we would not see a typical gonorrhœal rheumatism develop without the presence of gonococci. Urethral suppuration is characterized eminently by a tendency to absorption of the products, and is prone by metastasis to settle down in the wrist, knee and elbow joint. Therefore, it is better to call such a form of rheumatism by the name of urethral rheumatism; and by so doing you will not be passing a harsh judgment on patients who do not really deserve the implication suggested by the term gonorrhœal rheumatism. I never employ that term unless I find ono rrhœa present, and then you are perfectly right in using it.

The treatment of ordinary acute articular rheumatism and the treatment of gonorrhœal rheumatism are different. The latter form of rheumatism is more virulent, gives the patient a great deal more pain, and is more tedious. In this case here we have no acute symptoms to deal with, but we have the chronic form and a very troublesome stage of the malady. I have examined the mobility of the wrist-joint, and find passive mobility possible and not painful. I find that the joint is not hot, nor is the temperature of the body raised.

We can restore suppleness to the parts after we have found out the cause of the trouble, and what is the cause? Inflammatory deposits outside the joints and synovial sheaths in the muscles, and a general atrophy of the muscles which preside over the various movements of the wrist and hand. We shall try to remove as many of these deposits as possible, and to that end will have to employ means to bring about absorption of the inflammatory effusions within and around the various tissues of the joint. To increase the force of the atrophied muscles, we shall have to stimulate the local circulation of the parts by hot or cold douches. You know heat or cold will cause the tissues to flush up, causing a local hyperæmia. It is just in such a case as this that massage should be employed, and I have no doubt it will accomplish a perfect cure.

Hence, by exposing the patient's hands to the action of hot water for fifteen minutes, and by employing methodical and careful massage, of the fingers, hands, wrist and forearm, following this up by faradic stimulation and active movements of the patient, we shall do away with the two chief causes of her present disability, inflammatory deposits and atrophy of the muscles.

FORWARD DISLOCATION OF THE RADIUS AND ITS REDUCTION.

By Thomas Parker, M.D., East Portland, Ore.

Miss D. P——, aged twenty, of Mount Tabor, Portland, called at my office and complained of having sustained an injury to her elbow on the previous day, in consequence of which she was unable to attend to her duties. A forward dislocation was diagnosed without difficulty. After several unsuccessful attempts at reduction, on the plan laid down in the text books, the patient was ordered home, but to return the following day, and in the mean time use hot fomentations to reduce the swelling.

Being then engaged with Professor Henry Coe in dissecting for his class, I hastened thither, and after considerable trouble produced a forward dislocation of the radius in the cadaver. In so doing my attention was attracted to a peculiar action of the radius on pronation and supination, the forearm having first been flexed; upon performing the latter it was interesting to see how the shallow, cup-like surface of the head of the radius screwed off the capitellum into the depression above the front part of the radial tuberosity, and how, upon pronation, it left its abnormal site, and gliding with a screw-like motion returned upon the capitellum. From the above experiment the following plan is easily declared: For the easy reduction of a forward dislocation of the head of the radius, flex the forearm, then make firm pronation with one hand while the other follows the head of the radius into its normal site. This simple plan succeeded on my patient the following day at the first attempt.

The injury in this case was caused by powerful action of the biceps muscle, pulling the head of the bone out of its place, the forearm being strongly supinated, in the act of lifting a heavy weight from the ground.—*Record.*

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ORIGINAL ARTICLE.

CATAPHORIC ELECTRODE.[1]

By Edward H. McBride, M.D., Springfield, Mo.

An article appeared from Dr. Hunter McGuire, of Richmond, during the past winter, in Gaillard's Journal calling attention to the treatment of goitres by the cataphoric electric method—at same time reporting a number of successful cases treated.

At the time that Dr. McGuire's article appeared I had an order in the hands of Messrs. McIntosh and Co., of Chicago, for the manufacture of a cataphoric electrode that I have devised for my own use with a view to bringing my electrode to the notice of the medical public. I ask the favor of the columns of the Journal.

I will assume that all the readers of the Journal knew that electricity applied from a galvanic or continuous current battery with a suitable electrode attached to the cord of the positive or anode pole has the power of conveying fluid medicines beneath the skin for local or constitutional effect, and that the process is known as the cataphoric action of electricity ("cataphoric" from *cata* downward, and phoro to move) and that the current travels from the positive to the negative, and that in order to obtain the cataphoric action the medicine must be placed beneath an electrode connected with the anode or positive pole of the battery.

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[1] The above was too late for our regular department of this issue.

In the treatment of tumors, where it is desirable to obtain the electrolytic action of the continuous current, the addition of absorbent medicines, as iodide, etc., combines the cataphoric and electrolytic action and brings better results than when the latter or either is used alone.

In short, then, cataphoric electricity can be used and is indicated in any case, sciatica, neuralgia or otherwise, where it is desirable to introduce medicines beneath the skin in a safer and more pleasant manner than the hypodermic syringe, and where the additional benefit of electricity is desired and indicated.

The defect with all cataphoric electrodes that I have seen is that the cup cavity for holding the medicines is a fixed or immovable chamber, and when it is desirable to obtain a very close contact between the conducting disk and the skin of the patient, it cannot be done, and when lint or cotton cut to fit the chamber and saturated with the medicants happens to be too thin, not filling the chamber, then the resistance to the current is very much greater than when a close contact is obtained by squeezing the lint by means of an adjustable or movable disk, such as my electrode has. On uneven or nodulated surfaces, the advantage of the adjustable disk will be apparent to any one.

A six to twelve cell McIntosh battery will give enough electromotive force to develop the full cataphoric actions needed in most cases, and will cause the disappearance of six or eight drops of tincture of iodine beneath the skin in three to seven minutes. I have lately caused the reduction in circumference of a goitre of thirty years' standing of an inch in thirty days by cataphoresis with my electrode.

The accompanying wood cut will, with explanations here given, fully show the simplicity and advantages of the electrode:

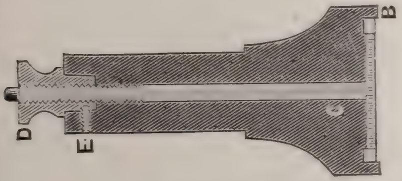

PLATE NO. 1.

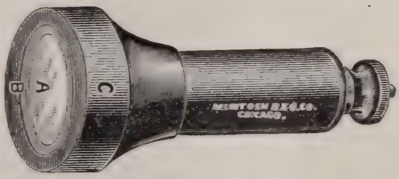

PLATE NO. 2.

"A" is the disk made by aluminium and is fastened to a stem or rod of brass or other suitable metal, which stem passes upward through an opening in the hard rubber handle or casing "C" and through nut "D." and projects an inch above the rubber casing with an opening in the end to receive the tip of any ordinary cord used in batteries.

On the upper end of the stem are screw threads which fit in a nut "D" at the top.

By turning nut "D" the stem is lowered or raised as desired, and of course the disk, being integral thereof, is carried up or down.

E is a conical pointed screw that passes transversely through the casing "C" and projects into a groove that is cut in lower end of nut "D" to prevent any upward or downward motion of said nut.

"B" is a hard rubber tip or rim—a continuation downward of casing C to insulate the instrument and to form a cavity to hold fluid medicines beneath the disk.

Inside of the hard rubber rim is a soft rubber washer or ring which embraces the circumference of the aluminium disk to prevent any upward evaporation of fluids that might rust the rod.

In using the electrode I cut a very thin layer of cotton or lint, to fit the chamber and put it in place; then with a glass dropper I place a few drops of the medicant in the center of the cotton, leaving it dry near the outer edge, close to the soft rubber ring, so that when the current is turned on it will be obliged to pass only through the central or medicated moist portions, thereby giving the most favorable cataphoresis that can possibly be obtained.

After closing the circuit I turn the nut and bring down the disk gradually, as the fluid is driven into the skin, so that when the operation is finished, the disk and skin are only separated by a thin compressed layer of lint.

Plate No. 2 shows the electrode as a whole.

I have used the gold and manganese solution recommended by Dr T. Blake White for tuberculosis with my electrode by the cataphoric method in place of hypodermic syringe. I applied it to the thin skin on side of the front of the neck,—used four drops once daily, but have not yet sufficiently tested the method to determine as to the comparative efficacy of the drug used that way.

The indifferent electrode I placed on back of the neck.

EDWARD H. MCBRIDE

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PHARMACY AND THERAPEUTICS.

METHYLENE BLUE IN THE TREATMENT OF CYSTITIS.—At a recent meeting of the New York County Medical Association, Dr. Joseph N. Henry presented two specimens of bright blue urine, which, he said were from patients suffering from chronic cystitis, whom he had been treating with methylene blue. He had adopted this plan in consequence of reports which he had seen in German journals, and it was his practise to give one grain of methylene blue three times a day, after meals. One of the patients, who had been suffering for over two years, had locomotor ataxia and prostatitis, and gave a syphylitic history. There had been 20 per cent. of mucus in the urine; but in three weeks this had been reduced to 1½ per cent. The other case was non-specific, and the patient had just been discharged cured.—*Notes on New Remedies.*

PILOCARPINE IN DIPHTHERITIC PHARYNGITIS.—Vialle reports a speedy cure in the case of a child ten years of age, who suffered from a grave attack of diphtheritic pharyngitis. One-sixth of a grain of pilocarpine was injected every day. Local treatment was carried out at the same time, with the result of a cure in ten days.—*Actualité Médicale, May* 11*th,* 1892.

IPECAC IN WEAK LABOR PAINS.—Ipecac has been warmly recom mended in simple weakness of the uterine contractions. Two or three doses of ten to fifteen drops of the wine of ipecac at intervals of ten minutes are sufficient to produce within a short time a strong contraction of the uterus.

KATZENJAMMER.—Resorcin is said to act admirably in cases of nausea and depression following a carouse. It is given in the dose of from five to ten grains in plenty of water flavored with syrup of orange peel, and may be repeated one or twice at intervals of half an hour. A dose of ten grains is said to be usually sufficient.—*Brooklyn Medical Journal.*

THE MOST ACCURATE way of estimating the virtues of Elixir Three Chlorides seems to be, first, to fix in our minds what we know Iron, Arsenic, and Mercury, as isolated Chlorides, are capable of doing when introduced into the system. Second, to make the application.

SULFONAL IN INSOMNIA.—The recent reports concerning the value of this hypnotic agent affirm the earlier clinical conclusions, that Sulfonal must be regarded as our best hypnotic. One or two observers cite some instances in which drowsiness has followed its use, and two cases are mentioned in which dizziness occurred after a sleep of ten hours produced by Sulfonal. The reported details seem to show that the doses administered were somewhat in excess of the amount of Sulfonal necessary to obtain a useful therapeutic effect. The weight of evidence, as shown in the very large number of cases thus far reported, would seem to demonstrate that Sulfonal is an active hypnotic, remarkably free from toxic influences of any kind, and especially available for the exigencies of general practise in the treatment of all forms of insomnia.

The value of Sulfonal in the neuroses has been widely tested by neurologists, whose published conclusions point to a wide field for the use of Sulfonal in this direction. In asylum practise Sulfonal has largely replaced the opiates and narcotics, and the reports agree that its use was not followed by the pre-somnial excitation and post-somnial exhaustion which so often supervenes upon the administration of other sleep-producing remedies. It was noted also that the good effects of Sulfonal often continued for many days after it was withdrawn.

The question as to the liability of Sulfonal to induce a drug habit has been considered by several investigators, all of whom report to the effect that such a sequence would be unlikely to follow a remedy of this nature. One observer presents the reason for this, as follows: "Drugs which give rise to habits are those which, like opium and cocaine, stimulate before they effect narcosis; and habitués take them for their qualities as incitant; Sulfonal is a pure hypnotic, and gives that effect alone." This seems to formulate the consensus of medical opinion upon this subject.

A Resolvent for Glycerole.—*L'Union Médicale* for December, 24, 1891 (*Therapeutic Gazette*), recommends the following prescription as an application to be placed over strumous glands at the same time that cod-liver oil is taken internally with a tonic and stimulant treatment:

℞ Iodoform.......................................grs. xxx.
Balsam of Peru.................................ʒ iss.
Glycerin...ʒ vi.

Formula for the Treatment of Post-Partum Colic.—Dr. Rutherford (*La Semaine médicale*, No. 29, 1892) recommends the following formula in the treatment of post-partum colic:

℞ Sulphate of quinine..............................gm. 1
(grs. xv.)
Pulverized opium,..................................dgms. 5
(grs. vijss).
Extract of trifolium, q. s.

Sufficient for fifteen pills. One pill every two or three hours until the pains cease.

Burns.—The following is an excellent dressing for burns:

℞ Campho-Phenique.................................℥ j.
Lanolin.
Ung. aquæ rosæ,..................................aa ℥ j.
M.
Sig.—Apply two or three times a day.—*Weekly Medical Review.*

Strontium Lactate in Tænia.—Laborde ("*Journal de Med. de Paris*") has had excellent results in tænia with the usual dietary care from the following:

℞ Strontii Lact. (Paraf-Javal)........................ʒ j
Aquæ..ʒ viij
Glycerini..q. s.

M. S.—Two teaspoonfuls every morning for five days.

This is practically the same strength as the standard solutions of
Stront: Lact: (Paraf-Javal)
used so largely in Albuminuria.—*Medical Standard.*

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SANITARY.

Dangerous Diabetic Flours.—In order to ascertain by chemical analysis whether a flour is suitable for the use of diabetic patients, a weighed quantity of the flour is taken and the carbo-hydrates converted into glucose by treating it with sulphuric acid in an inverted condenser for a few hours and then estimating the amount of glucose by the alkaline copper test. This process, with care, gives absolutely reliable evidence.

Some of the foods which have been advertised of late, and especially American foods claiming to be "mainly free from starch," have, according to this test, been shown to be absolutely pernicious as diabetic foods. Our attention was directed to the fact that one specimen in particular which was advertised in the columns of *The Lancet* had no claim whatever to the qualities ascribed to it, and we therefore submitted samples to analysis, and have ascertained that the so-called gluten flour contains over 66.60 per cent. of starch and the other so-called diabetic flour, over 62.00 per cent. of starch. That is to say, the quantity of glucose yielded on conversion or acid digestion is not a whit less than that similarly yielded by normal wheaten flour. The tests were performed again and again with varying amounts of flour, so that there cannot be the least doubt about the results.

One firm—that of Messrs. Farwell & Rhines—invited medical men to send for samples of these flours free of charge. The microscope showed them to contain wheat-flour granules in abundance. The preparations are made so as to simulate the appearance of gluten flour, for they are prepared in a fine granular form. A pamphlet is issued to the members of the medical profession and the preparations are even claimed to be recommended by the profession. Patients are under the impression that they are taking the proper diabetic food when in reality as bad a food for the disease as ordinary wheaten bread is being consumed. We have evidence before us of many instances of positive harm arising, endangering the life and health of diabetic patients to an enormous extent. The effect of such foods is that patients who ought to have had little or no sugar in their urine, according to the regimen adopted when under treatment, have large amounts of sugar accompanied by severe and marked symptoms of the disease. They have asserted that they have been taking the restricted diet, which has been absolutely contradicted by the state of the urine and their symptoms, and upon inquiry and investigation it has been found that they have been making use of the American flour under the impression that it consisted of the proper gluten flour as supplied by the approved gluten food makers in London.

Whatever view of the nature of diabetes is held—and there is by no means unanimity on the point—there can be no question at all as to the desirability of reducing the amount of carbohydrate food in the diabetic to the fullest possible extent. The doctrine, for instance, of faulty action of the liver, that of hyperglycogenesis and the like, is necessarily bound up with the amount of glycogen-forming material that finds its way into the portal circulation. Or if, as Dr. Pavy holds, the essence of the disease is due to defective assimilation of the carbo-hydrate element of food, the argument for restriction of diet is even more obvious. For on this doctrine the carbo-hydrate principles of food, instead of passing in their proper direction toward utilization or consumption and disappearance in the system, in diabetes, through defect of their chemical transformation, simply run—through the influence of ferments with which they come in contact—into sugar, which, reaching the general circulation will pass off by osmosis into the urine. It does not signify in the slightest degree what carbo-hydrate is given, the result will be the same. In giving carbo-hydrate food in this disease, not only is the food perfectly useless to the patient because it cannot be properly assimilated, but it produces an absolutely pernicious effect by reaching the general circulation and inducing at once an abnormal condition. In diabetes the blood in the general circulation contains sugar quite in proportion to the amount of the carbo-hydrate which has been ingested with the food ; and as the food of the general circulation becomes charged with sugar, so in proportion will be the deviation from the normal state, and in proportion to the deviation from the natural state of the food, so will be the failure in health and the symptoms of the disease. Of course this is true only up to a certain point, for under some conditions the dietetic restrictions are neither well borne nor efficient, and the physician may feel compelled to remove them in the interest of his patient; but such cases are exceptional.

ABSTRACTS.

INTRATHORACIC SURGERY.—Willard (*American Journal of the Medical Sciences*, vol. cii., No. 6), after a detailed account of experiments conducted for the purpose of discovering whether or not bronchotomy through the chest wall is feasible for the removal of foreign bodies impacted in the bronchi, and after a careful consideration of a case of foreign body treated by this operation, comes to the following conservative conclusions:

1. The bronchus in dogs can be reached either anteriorly or posteriorly through the chest walls, but the anatomical position is in such close proximity to large and important structures that safe incision is a matter of extreme difficulty and danger.

2. Bronchotomy through the walls of the thorax is an operation attended with great shock from collapse of the lungs, and, until technique is further advanced, is liable to result in immediate death.

3. Collapse of the lung is more serious in a healthy organ than in one previously crippled by disease.

4. The serious inherent difficulties are shock, suffocation from lung collapse, enormous risks of hemorrhage from pulmonary vessels, injury of or interference with the pneumogastric, great and fatal delays owing to the exaggerated movement of the root of the lung caused by the excessive dyspnœa.

5. Closure of the bronchial slit is slow and dangerous. To leave it open causes increasing pneumothorax by its valve action, and also permits the entrance of septic air into the pleural cavity.

6. Although a foreign body can be reached by this route, yet removal is hazardous. To secure a subsequent complete cure seems in the present state of knowledge very problematical.

7. When the presence of a foreign body in the bronchus is definitely determined, and primary voluntary expulsion has not been accomplished, there is great danger in permitting it to remain, even though it may but partially obstruct the tube. The risks both of immediate and of subsequent inflammation are serious.

8. Low tracheotomy is, then, advisable when the presence of a foreign body is certain; it adds but little to the risks, and affords easier escape for the object even when extraction is not feasible.

9. *Subsequent dangers arise from severe and prolonged instrumentation, not from tracheotomy.*

10. Voluntary expulsion is more probable after than before tracheotomy.

11. Tracheotomy is permissible even after an object has been long in position unless serious lung changes have resulted.

12. The question of tracheotomy will depend largely upon the form, size, and character of the foreign body.

13. The term bronchotomy should be limited to an opening of the bronchus, and should not be employed to designate higher operations.

14. The risks from thoracotomy and bronchotomy following unsuccessful tracheotomy are much greater than the dangers incurred by permitting the foreign body to remain.—*Therap. Gazette.*

CHLORINE IN COMBINATION WITH PHENIC ACID, THE IDEAL ANTISEPTIC AND DISINFECTANT.—J. E. Chambers, M.D., coroner's physician of St. Louis, speaks as follows on this subject:

The term "Antiseptic" is no longer doubted as a medical term; nor is there longer a doubt of the value of antiseptics in surgery, midwifery, or the hygiene of the sick room.

The victory of antiseptics is the greatest triumph achieved by scientific medicine in an age of triumphs, and so numerous are the antiseptic preparations that have sprung up, that the question of what antisepsis is, changes to the question of the selection of an antiseptic agent.

The nearer we keep to nature, the fewer mistakes we make. In calling nature to our aid, we find that chlorine in the shape of the various chlorides, is nature's great antiseptic. Were it not for the chloride of sodium—common salt—in any ocean, it would be one seething mass of corruption, and the present invigorating sea breeze would create a pestilence capable of removing all the higher orders of life from the face of the earth.

Ages before the terms "Septic" or "Antiseptic" were known or used, our ancestors were practising antisepis with chloride of sodium, without knowing the philosophy of its action and were nearer to nature than many scientists of our scientific era. The antiseptic property of chloride of sodium is inherent in the chlorine, sodium, like lime and mercury, having no antiseptic properties. The more ready a chloride is to decompose and give up its chlorine, the more marked are the antiseptic properties of that chloride. All the chlorides are now classified as antiseptics, while the bases of the various chlorides are usually inert, antagonistic to antiseptic action or so irritating to the tissues as to unfit them for use in medical or surgical practice.

Chlorine has no rival as an antiseptic, but in its free gaseous form it is difficult to manage, while in its compounds are found the objectionable features of the bases with which it is combined.

Following nature, custom and common sense, it has been a maxim from biblical days that "Cleanliness is next to Godliness." Water being easily impregnated with chlorine, "Chlorinated Water" was highly recommended for cleansing foul ulcers before anything about antiseptics was known.

The cleansing property of water is well known, and the master of antiseptics for medical and surgical practise is a carbolized-chloro-oxide of hydroxyl, known as chloro-phenique. In this preparation are all the elements that go to make up an ideal antiseptic, viz.: carbolic acid in sufficient quantity to anæsthetize the exposed nerve fibres and to reduce the local temperature, and chlorine gas held in suspension sufficient to destroy all septic material. A ten to twenty per cent. solution is a valuable wash to all ulcerated mucous services, such as the mouth, nose or throat, or as an injection into vagina, uterus, bladder or rectum in an ulcerated or inflammatory condition of these organs. Its value as a disinfectant cannot be estimated, as it gives off, by evaporation, sufficient of its gases to disinfect the sick room and rid it of all offensive or poisonous odors. If the chlorine odor is offensive to the patient, that objection may be met by any suitable perfume.

Chloro-phenique is strong enough in its undiluted state for any case or condition in surgery or medicine calling for antiseptics or disinfectants, while minor conditions are met by solutions of various strengths.

In summing up the qualities of chloro-phenique, we find first, that in its use we are but following nature's laws; second, that it can be made of any desired strength or solution; third, that its disinfectant are equal to its antiseptic properties; and last, but most important, its volatile properties render the atmosphere sterile in the vicinity of the wound to which it is applied equal to the action of a constant spray.

In conclusion, allow me to say that chloro-phenique, as an antiseptic and disinfectant has no superior, and we need no other.—*The International Journal of Surgery.*

PROCEEDINGS OF SOCIETIES.

OBSTETRICAL SOCIETY OF LONDON.

Ectopic Pregnancy.—Hysterectomy.—Growth of the Placenta after Death of the Fœtus in Ectopic Gestation.

A meeting was held at 20 Hanover square on the 1st inst., Dr. J. Watt Black, president, in the chair.

Mr. Lawson Tait read a paper on a case of Ectopic Pregnancy in which the fœtus seems to have been developed to the full time in the peritoneal cavity, still retaining its amniotic covering. The patient, aged thirty-six, had two children, the last three years ago; no miscarriages. Her last period was in the middle of July, 1890; then she saw nothing till May 20, 1891, and during that period has been getting larger; has had morning sickness, and milk appeared in the breasts in February, 1891. In September, 1890, she is said to have had "inflammation of the covering of the bowels," and was in bed a month. She first felt the child move about Christmas, and in January she fainted while dressing, and had to be carried to bed. She then had pains like labor. These gradually passed away, and at the end of a week she got up. All fœtal movement ceased suddenly on May 8th, and from then till October she noticed she got considerably smaller round the waist. On examination, the uterus was only slightly enlarged, but filling up the pelvis was a large globular, tender, boggy mass. On abdominal palpation a large movable mass was felt, in which distinct parts of the fœtus were detected. Abdominal section was performed on Oct. 12th; the umbilical cord ran down to the pelvis, and was inserted into the boggy mass felt there. The child was lying loose in the abdomen, except that all its upper surface had become adherent to the omentum and to the anterior parietal peritoneum. The child was enclosed in its membranes, but the liquor amnii had disappeared. The placenta peeled out of the pelvis easily, and was found to come from the right Fallopian tube. The patient made an uninterrupted recovery. From the history and specimen removed, Mr. Tait thought the patient became pregnant in July, and then in September, at about the tenth week of gestation, the tube ruptured, giving rise to what was called by her medical man "peritonitis"; the fœtus in the amnion was extruded entire through a rupture in the Fallopian tube, and the entirety of the placenta retained in the tube. The case proves that a living fœtus at ten weeks of age can resist the digestive powers of the peritoneal cavity if the amnion be unbroken. The case explains one of the varieties of so-called "abdominal pregnancies," and probably indicates the true solution of all the cases of this variety.—Dr. Horrocks asked whether Mr. Tait advised operation as soon as the diagnosis of extra-uterine gestation was established, or whether he recommended waiting until the child was dead or until the full period of gestation had passed. His own experience was in favor of operating as soon as the diagnosis was made, whether the child was viable or not.—Dr. Griffith inquired how Mr. Tait explained the direct adhesions of the omentum and abdominal wall to the fœtus itself, with the amnion sac remaining intact, and pointed out the great difficulty in defining the limits of the tubal wall from other constituents of the wall of the sac, even at so early a period as the fourth month. He did not think the evidence given that the placenta was entirely in the tube at all conclusive it certainly was most improbable.

Mr. Lawson Tait also contributed notes of two cases of hysterectomy The first patient was fifty-two years of age, had ceased to menstruate two years ago, and during the two months before Mr. Tait saw her the tumor had grown more rapidly. It reached up to the sternum, and pseudo-fluctuation was distinctly present. When the abdomen was opened the tumor was seen to be a myoma, and fluctuation was so distinct that a trocar was plunged in and six pints of fluid removed. The tumor (which weighed about 5 lbs.) was clamped and removed. The patient made an uninterrupted recovery. The second case was that of a woman aged forty-two who had had three children, all the labors being normal. When thirty-seven years old she began to lose profusely and then noticed a substance in the lower abdomen. A large multi-nodular myoma reaching above the umbilicus was found on admission, and the appendages were removed on May 13, 1888. She reported herself on July 26, 1890. Menstruation had not recurred, and she felt perfectly well. The tumor was found to have nearly disappeared. Later on metrorrhagia recurred, the uterus was explored for polypi, but none were found, and the endometrium was curetted, with temporary relief. The discharge came on again, and the tumor had again increased in size; so on Oct. 12th, 1891, hysterectomy was performed. The old multinodular myoma was hardly to be seen, but a large independent growth of a soft œdematous character had grown to the size of the original tumor. The patient made an uninterrupted recovery. The case was a unique example of a soft myoma springing up after a multi-nodular one had been removed, and Mr. Tait considered that while the latter variety of myoma is a disease of menstrual life, the former is not so.—Mr. Alban Doran believed that the œdematous fibroid of women who had reached the menopause or passed that epoch was a special form of tumor. Œdematous fibroid in the sense of œdema of an ordinary fibroid from definite causes was quite another kind of disease. Thus a partly impacted tumor was sometimes removed by operation. A few hours after its removal it would be found shrunken to half its size, the impacted tumor had caused true œdema, which of necessity disappeared for mechanical reasons after the knife had passed through the tissues of the tumor. The "œdematous fibroid" of the menopause was often unaccompanied by any visible cause of œdema; its vessels might be seen passing between its surface and its capsule free from any sign of pressure without or plugging within, while its entire mass lay free from any severe pressure in the abdominal cavity above the pelvic brim. These tumors did not lose much by draining off their fluid after removal, though like all soft tumors, they shrank when immersed in spirit.—Dr. Duncan asked whether the fluid removed had been examined chemically; also whether the lining membrane of the cyst had been microscoped, as it was known that some of these œdematous fibroids owed their condition (as Virchow had shown) to dilated lymphatics.—Dr. Horrocks said that in all probability the word "fibroid" included a group of different tumors. We already knew of differences in the clinical histories of these tumors, and no doubt there was a difference in their pathology. In his own experience he found the ordinary hard fibroid a non-malignant tumor, which but rarely caused death, and then only by accident as it were. These tumors might become œdematous, as Mr. Doran had observed, but the œdema was different from that of the so-called soft œdematous myoma.—Dr. Hayes could not accept the conclusion arrived at from the report of the second case. Precise details were wanting. Abdominal tumors had an odd habit sometimes of disappearing and reappearing under the ken even of competent observers. Mr. Tait's teaching for a long time back was clear—viz., removal of the uterine appendages in the case of the hard myoma was frequently followed by its shrinking or disappearing, but in the case of the soft fibroid the operation was valueless. He would now have us believe that not only will the hard myoma shrink, but the soft myoma will originate and grow after the removal of the uterine appendages. He (Dr. Hayes) thought Mr. Tait was mistaken in that the softer fibroid was present when the first operation was performed.—Dr. Leith Napier remarked on the different degrees of hardness found in myomata. Doubtless imbibition of fluid and inflammatory changes in the capsule accounted for conditions differing widely from the degree of hardness generally met with; but if we regarded certain of these soft œdematous fibroids as examples of myxo-fibromata, and recognized that degenerative cystic changes in these might originate general softening in some cases, and in others cause larger cysts to form, it would be a nearer approach to what seemed the true pathology. It was extremely difficult to draw clear distinctions between a soft œdematous fibroma and a true myxo-fibromo. He mentioned a case in which abdominal section was performed in order to remove the uterine appendages, but when the abdomen was opened the central portion of the tumor was found soft and fluctuating, having undergone mucoid degeneration, so that hysterectomy was considered advisable.—Dr. Griffith said there were three well-recognized conditions which may cause enlargement of fibroids after climacteric—first, simple œdema; second, liquefaction of the constituent muscle cells and connective tissue leading to the formation of large and small irregular cyst-like cavities, with ragged walls and generally associated with calcification of other parts of the tumor; and third, the development of true cysts with a smooth glistening wall, but usually without an epithelium. There is a comparatively rare form of soft fibroid which grows much more rapidly than the usual kind, and which contains a large amount of what appears to be lymphoid tissue. All these forms he had exhibited at meetings of this society with microscopical sections.—Dr. Lewers thought that some tumors were included under the name of "fibroid" that had an entirely different clinical history and pathology from the common variety. He had seen two cases in point where there were large uterine tumors composed of a large number of small cysts separated by fibrous tissue. In neither was there menorrhagia nor was the length of the uterine cavity increased, though in one of the cases the tumor reached up to the epigastrium. In this case the menopause had occurred a year previously: in the other the patient was a young woman about twenty.

A paper on the Growth of the Placenta after Death of the Fœtus in Ectopic Gestation was next contributed by Mr. Lawson Tait and Dr. C. Martin. A patient was sent to Mr. Tait with this history: She was twenty-eight years of age, and had had one child two years before. Two months before being seen by Mr. Tait, after having seen nothing for seven weeks, she was suddenly seized with acute pain in the left lower abdomen. Protracted syncope set in, and then the temperature went up, and for some days the abdomen became extremely tender. A fortnight later she was again seized with acute pain, followed by syncope, pyrexia and general abdominal tenderness, which was most severe in the left iliac region. On examination the uterus was large, irregular, and somewhat fixed, and a firm, tender mass was to be felt to the left of it. There was no history of the passing of decidua, and the patient had no idea she was pregnant. When the abdomen was opened it was found to contain a quantity of old and recent blood-clot. The right appendages were adherent, but otherwise normal. The left Fallopian tube was the seat of an ectopic gestation, and when removed was the size of a large orange. There was a considerable rent in one side of the tube, and on splitting open the gestation sac there was seen to be a small cavity lined with amnion, and containing a very little liquor amnii. Sessile on this amniotic cavity, there being no umbilical cord, was a small fœtus less than an inch in length, much flattened, shrunken and macerated. The greater part of the gestation mass was composed of placental tissue, infiltrated to a very slight extent with blood-clot. Microscopical sections by Dr. Martin proved that this mass was placenta and not blood-clot. The authors thought the interesting point of the case was that the placenta had gone on growing after rupture of the tube and death of the fœtus, for it far exceeded in amount that which is normally present with a fœtus in so early a stage of development. The placenta was that of a four-months' pregnancy, while the fœtus was only seven weeks old. They thought the case proved conclusively that the placenta, after the death of the fœtus, may in some cases go on growing and be a source of disaster to the patient; for had the pregnancy not been removed by operation, the patient would no doubt have been subject to a third attack of rupture and syncope, and possibly would have succumbed from internal hemorrhage, and this in consequence not of the continued growth of the fœtus, but of the placenta.—Dr. Griffith first inquired if Mr. Tait, in describing growth of the placenta, referred to the fœtal or maternal, or both portions. [Mr. Tait replied, fœtal only.] Dr. Griffith then stated what a difficult task was attempted by those who held similar views—namely, to satisfy themselves at least that the fœtal placenta, a part of the fœtus, continued to grow after the fœtus itself was dead. It must be remembered that there is greater variety in size in extra-uterine even than in intra-uterine placentæ, and very large ones were well known in cases in which post-mortem growth was impossible. Again, we ought to have undoubted proof of intra-uterine post-mortem growth in cases where the chorion remains attached to the uterus for some weeks; but all the evidence on this point is certainly against the occurrence of any such growth. The cystic degeneration referred to as evidence cannot be accepted in the face of this fact; besides, enlargement of villi due to such degeneration is not growth.—Dr. Horrocks believed it possible for the chorionic villi or placenta to grow after the death of the fœtus. He thought it would be difficult to account for the relative smallness of the fœtus in certain cases of both intra-uterine and extra-uterine gestation on any other hypothesis. When the fœtus was dead it could get no nutrition for itself, owing to the cessation of the circulation, but the chorionic villi were in a different position. They were imbedded in maternal structures, and it was not very conceivable that they might derive nutrition from the vessels of these structures, but it was quite certain that they did so in the case of hydatidiform degeneration, where there was great increase in growth, the nutrition for which must come from the maternal vessels, inasmuch as the fœtus was in most cases dead from quite an early period of gestation. He mentioned a case in which he had operated where the fœtus had died so early as to be undiscoverable, and yet where the tumor had continued to increase in size apparently by growth of the chorionic villi.

The following specimens were shown:

Dr. Malins. (a) Ruptured Extra-uterine Gestation; (b) Hæmatosalpinx.

Dr. Cullingworth: Unruptured Tubal Gestation.

Dr. Wheaton: Microscopical Sections of (1) Polypoid Growth from an Infant's Umbilicus; (2) Fibroid Tumor; (3) Endometrium of an Eight-months Fœtus.

Mr. J. R. Radcliffe: Uterus Bicornis.

MISCELLANEOUS.

The Study of Medicine, both for the Student and Doctor.—There is the widest difference in the world between the study of medicine and its practise. When the average medical student leaves college he thinks he has mastered his profession; when he enters upon real work he is amazed at how little he does know. The young medical student's actual education begins when he "walks the hospitals." There he gains experience, practical knowledge, from real cases. In college he studies cases from the theoretical point of view; in practise, as a rule, he comes in contact with patients; as a rule these are suffering from what physicians call slight ailments, the nature and treatment of which he must learn from actual observation. He "walks the hospitals" for two or three years. Then, if he has the means to do so, he should go to Europe and study again in Vienna, Paris or Berlin.

It is asked sometimes why the medical student should go abroad to study his profession. The fact is that European physicians are much more learned than their brothers in this country. On the other hand, they are not so successful as we are in the practise of the profession. Their education is deeper and broader than ours, but in the direct art of healing the sick we achieve better results. They know more about the etiology or theory of disease than they do about the practical application of remedies.

When you come to think of it, this condition of affairs is very natural. The aim of the foreigner, more especially the Frenchman or the German, is to obtain honors, or a position under the Government. Official appointments are held in much higher esteem abroad than they are in this country. There are more honors to be obtained over there than here. There are all sorts of decorations which are coveted which confer distinction upon their wearers, and command respect and homage. There are positions to reach which men will strive for half a lifetime. In the United States the young physician is struggling not so much for honor as for dollars; doctors here aim to produce results, the fruit of successful practice, that will bring in a financial return. It is asked why we have so many doctors. Beyond doubt the ranks of the profession are overcrowded; overcrowded beyond that of any other profession. * * *

After the young physician has been graduated and has served his time in the hospitals, and returned from foreign study, it will take three or four years to get a fair start from the business point of view. How soon he will secure patients will depend very much on opportunity and on the industry with which he follows his vocation; for medicine is probably the most arduous of all the professions.

Sometimes a doctor will advance on account of having married a rich wife. But neither wealth nor social position will avail him in the long run unless he has real ability and skill, and, above all, a certain amount of personal magnetism that will inspire confidence on the part of patients.

It should be interesting to a young person contemplating the study and practise of medicine to note that the two branches of the profession—the homœopathic and the so-called allopathic—have had a very wholesome effect, the one upon the other. They have been distinct and apart from each other, but now they are becoming less and less so every year. I doubt if to-day there is a single homœopath who practises exclusively the Hahnemann theory as promulgated by its discoverer.—*Dr. Cyrus Edson in the Doctor's Weekly.*

HOME: RURAL, URBAN, OR SUBURBAN?—A variety of excellent reasons have contributed to the formation of the common opinion that it is good for persons engaged in the city business houses during the *day* to spend their hours of rest amid the healthier surroundings of a rural home. Adults are, in some ways, gainers by the exchange, and, in a much greater degree, so are their children. The smiling cottages and villas which are springing up round every large town possess evident advantages over many older street dwellings. In and around them there is greater cubic air space, they are better lighted and ventilated; even the less pretentious have their baths with an ample water supply, and domestic sanitary arrangements, if often imperfect, are usually much more in accord with scientific rule. Last, and far from least, in importance are the benefits conferred by freer and purer air and out-door recreation. There is little wonder, then, that children especially thrive among such favorable circumstances. The picture is a bright one, but it would not be real without some shadows. These, though fortunately not such as to overcloud the whole, are still not without a decided influence upon its general tone. One in particular cannot fail to attract notice. We might call it an effect of distance. It is, we must admit, largely remediable, and even self-adjusting. It consists in the frequent inconvenience incurred by railway journeys to and from school or business. It is not altogether easy to recognize at first sight the effect of this little cloud upon the landscape. The children of a family which has migrated are not much affected by it, nor are the majority of men and women while still in the vigor of their youth. The case of the parental breadwinner of middle age is different. For him the change implies the addition of various small worries to those which form his daily environment. There is the morning bustle, with its hastily swallowed meal, and its rush to catch an early train; and again the push to finish work in time to begin, perhaps at a late hour, the return journey. These may seem to be mere trifles, as they are if taken severally, but they are such as tell decisively against health and temper during years of repetition. We have often questioned whether the gray hairs thus prematurely added are fully compensated by the freshness of sleep and of Sunday rest in a relatively pure atmosphere, and we would say that the privilege is often too dearly purchased at its cost. Doubtless it is also often preferable, though not in every case, to life on a city flat. Health and comfort, in our opinion, however, are more wisely sought by those who follow a middle course. Life in some suburb near the scene of business activity affords a better solution of the difficulty as to atmosphere and sanitary convenience. Under no ordinary conditions of rural amenity would we exchange for this the rush and rattle of a tedious and often repeated railway journey between town and country.

THE PERILS OF CERTIFYING IN LUNACY.—It will be remembered that very recently a subject engaging the attention of the Parliamentary Bills Committee was the case of an action in lunacy against two medical men, on account of certificates of insanity signed by them, under which the plaintiff had been sent to an asylum for a time. The importance of the case to the medical profession generally consisted in the fact that it revealed, in a disappointing and unexpected way, the defective protection to medical men under the actual working of the recently new

Lunacy acts. Upon the defects of these last, in that sense, the case threw a very strong light.

The report of the sub-committee having been adopted by the Parliamentary Bills Committee,[1] the first three of the suggestions contained therein, and forming a first line of defensive protection suggested for medical practitioners, were forwarded to the Lord Chancellor, as head of the lunacy department. From his letter, in reply, his lordship is evidently impressed by the anxious consideration given to the subject by the Government, both in and out of Parliament; and is of opinion that it would be useless to reopen a discussion without much fuller experience of the difficulties which arise, and more general assent to the remedies to be applied.

We are glad to find that the Lord Chancellor promises, and assures us of, his very careful consideration of the case; for we venture to suppose that the full effect of the position in which he suggests that the matter should be left has not occurred to his mind. For he thinks it better to wait for a "much fuller experience of the difficulties which arise." But if we may take the case which was the subject of the committee's report and suggestions, and of the communication to the Lord Chancellor, as a criterion of what medical men must expect under the recent Lunacy acts, it follows that a much fuller experience of the difficulties which arise is practically the equivalent of a much fuller experience by medical men of ruinous actions against them in cases in which they have apparently done their duty in regard to the certification or care of the insane. If so, the defective nature of the protective clauses of the act in actual operation is clearly manifest.

The fairness of granting, and the necessity for special protective provisions for medical practitioners in the Lunacy acts, arise from the special circumstances and dangers of the case. For it is not a question of protection against an ordinary plaintiff; in regard to such, indeed, medical practitioners are not at all likely to ask for special protection. On the contrary, it is a question of protection under very unusual circumstances, and dangers which cannot be met by ordinary provisions. For one thing, most of these actions in lunacy are brought by persons who, at the time of bringing them, are in a state of morbidly perverted feeling, of lack of self-control, mental twist, or other half insane or wholly insane conditions. And, for another thing, the recent enactments put pressure on the usual medical attendant, in "private" cases, to sign one of the certificates and thus assume a weighty responsibility and risk.

In support of what has just been stated above on the general subject, we may fitly recall to mind the chief points in the preceding case, to

[1] British Medical Journal, April 23, 1892, p. 877.

which attention should be drawn. One is that, according to the law existent at the time, such action or suit must be commenced within a year after the release of the plaintiff. Nevertheless, this action was allowed to proceed, although not commenced until fifteen months afterward. Another is, that application was fruitlessly made to a judge of the High Court to have proceedings stayed under the provisions of the recent Lunacy Act. Another, that although the medical defendants gained the verdict, the heavy costs incurred by them, it is understood, will not be recoverable from the plaintiff. Again, the medical defendants have suffered great anxiety and loss of time and money for doing what was apparently their duty and the best they could for the plaintiff. The protective clauses of the recent Lunacy Act are retrospective as well as prospective, yet in the above case they proved to be illusory. Finally, the medical defendants since the trial have been subjected to further annoyance and expense in having to meet an appeal against the result of the trial. This was dismissed.

Typhoid Fever in Chicago.—We printed with great pleasure, a few weeks ago, a letter from Dr. Ingals, of Chicago, in which the writer stated that the sanitary condition of that city was far better than had been represented, and that all danger of contamination of the water-supply would soon be entirely removed. We are sorry now to learn, on the authority of the Chicago *Herald*, that the danger still exists. The city sewers discharge into the Chicago River, and the river empties into the lake. The water supplied to the city is drawn from a point in the lake said to be two miles from the shore, but yet in the path of the current from the river, and is directly contaminated by the sewage carried by this current. According to the *Herald*, "forty million gallons of diluted sewage" are added daily to the drinking-water of the city. With a population half a million less than that of New York, the deaths from typhoid fever in Chicago in 1891 were over five times as many as in this city, the figures being 1,997 for Chicago, and 384 for New York.

Such a showing would be disgraceful to the capital of Kurdistan or Mecca, but when we consider that it relates to the second city in America, and to a community that has invited the whole world to visit it next year, it is little short of incredible. If it were not for the World's Fair this matter would be of less interest to the rest of the country. We might look on with wonder that any community could exist in this enlightened age having so little regard for the lives of its members, but we should feel that it was for Chicago to work out its own salvation, and our duty would be ended with a warning to travelers who were not bent on suicide to keep away from the place.

But it is different now. This country has extended an invitation to all the nations of the earth to visit the city by the lake in 1893, and it is as much our duty to protect our guests from pestilence as it is to guard them against the assaults of highwaymen. Chicago, in securing the holding of the Exposition, has assumed responsibilities which the rest of the country must see that it does not shirk, and the chief of these responsibilities is the safeguard of the health of the strangers who are invited to visit it. It would be far better to call a halt at once, revoke all invitations to foreign exhibitors, recall the commissioners who have been sent abroad and demolish the buildings already erected, rather than expose confiding visitors to the horrors of an epidemic.

It is said that new pumping-works will soon be in operation which will force all the city sewage into the Illinois River, leaving the lake water absolutely pure. It is very evident, however, that those works are not yet in operation, or if they are, that they fall very far short of accomplishing what was expected of them.

It is an unpleasant duty to expose the shame of a city to which the eyes of the whole world are turned, but the matter is one that vitally concerns the honor of our country, and it would be little short of criminal to belittle such a real and present danger. We can but trust that our Chicago friends have a firm foundation for the hopes they continually express of a betterment of the sanitary conditions of their city, and none will be more glad than ourselves to announce that the time has at last come when one can go to Chicago without taking his life in his own hands. May the country not have long to wait before receiving these reassuring tidings.—*Medical Record.*

"CURES" FOR INEBRIETY.—A circular has been widely distributed by another American company which also professes to cure this disease, but of course disclaiming the method to which we referred in a former number. From this we learn that a medical man with an English qualification is the medical officer to the company, and the same gentleman begs to state that he has answered our article of June 6, 1892. The distribution of a small book of the usual type, affording only the vague information that the treatment is by hypodermic injections of modern alkaloid, is another instance of the total disregard of professional ethics in these matters to which we then referred. There is no question but that any medical practitioner is passing beyond the limits of professional etiquette in thus administering secret remedies, and we would suggest that the licensing authority from which he derives his qualification should take some notice of the circular and pamphlet. From an advertisement which appears in our columns it will be seen that Dr. Leslie E. Keeley has been invited to explain his treatment to the Society for the Study of Inebriety on July 5th. This is a proper method to pursue.—*Lancet.*

Nerve Grafting.—Dr. Damer Harrisson, after recalling to the Clinical Society of London the excellent results that followed close apposition of the ends of divided nerves, observed that the only satisfactory method of dealing with nerves the ends of which were too far apart to admit of their being sutured was by nerve grafting. He referred in detail to the history of eight cases in which this operation had been performed at home and abroad, and then narrated a case under his own observation. A lad, aged 13, was admitted into the Liverpool Northern Hospital eleven weeks after a cut of the front of the right wrist had divided the median nerve and all the flexor tendons except the flexor carpi ulnaris. On admission the fingers were immovably fixed in the flexed position, paralysis of both motion and sensation being complete in the region supplied by the median nerve. Trophic changes were also present, the hand being blue and cold, the skin glossy, and the short muscles of the thumb much atrophied. The flexor tendons were found to be matted together; nearly two inches of the median nerve had been destroyed, leaving a gap between the ends. After dealing with the tendons, the nerve ends were freshened, thus increasing the separation to two inches, and a graft 2½ inches in length, taken from the sciatic nerve of a recently killed kitten, was fixed in position by one fine catgut suture at each end passing through the substance of the nerve. The limb was then put in a splint with the hand flexed and the fingers straight. The wound healed by first intention. Sensibility began to return in the palm at the end of forty hours, and eventually extended to the fingers and the thumb, except to the tips of the fingers. There was also transference of sensation impressions, those from the index finger being referred to the middle finger. At the end of three months the nutrition of the hand showed great improvement. Motion did not return until the end of five months, and appeared first in the short muscles of the thumb. Now the patient could oppose the thumb to the index finger. Another operation of the same kind had still more recently been performed by Mr. Mitchell Banks, of Liverpool, upon the ulnar nerve at the elbow after excision of a neuromatous tumor, four inches being grafted from the sciatic nerve of a dog. Sensation returned within thirty-six hours. Of the ten cases quoted by Mr. Harrisson, three were perfectly successful, six partially successful, and one failed. He attributed the difference in the success attending primary and secondary grafting to the trophic disturbances present when grafting was resorted to as a secondary operation. Restoration of function took place readily enough after long periods of time in respect of sensory nerves, but the degeneration which took place forthwith in the distal portion of motor nerves rendered repair slow and the return of function very gradual.—*Doctors' Weekly.*

The Causes of Jaundice.—In his Lumleian lecture, Dr. Pye-Smith (*Lancet*, April 30th) speaks thus of the obscurity which still shrouds this familiar condition: With respect to its etiology, it is remarkable how little has been accomplished since morbid anatomy and animal chemistry began to be studied. It is little more than a century since the foundation of pathology, as a science of facts apart from speculation, was laid by Morgagni, and the knowledge of the chemistry of bile began with Berzelius; yet Boerhaave and Mead were not more ignorant than we of the cause of the most characteristic and remarkable form of jaundice. They, like us, could understand how when the duct of a gland is blocked by a calculus the secretion accumulates, distends the channels in which it runs, and is thus mechanically detained in the body. But we, like them, cannot explain jaundice without obstruction. Even in the case of obstructive jaundice, much remains to be learnt as to the nature of cholæmia. If the bile, or any of its constituents, is so poisonous, why does it circulate for weeks and months without producing its effects? If it is innocent, why are those effects produced at last? In either case, why is a manufactured excretion reabsorbed when the factory is reduced to ruins and the exit unimpeded? And why, in this case alone, are the symptoms of cholæmia as constant and speedy as in other cases they are tardy and uncertain? But it is the cases of jaundice which—by an almost subjective use of the word—we call simple, that are so puzzling in their etiology. We surely cannot be satisfied by the current explanations—which refer icterus simplex to obstruction by inspissated mucus, which no one ever saw; or by swelling of the duct or of the duodenum, of which there is no proof; or by the pressure of impacted scybala, of which the presence is entirely hypothetical. Do we find anything analogous in the case of the kidney, the pancreas, the mamma, the parotid, or the lachrymal gland? In many cases of jaundice is there the slightest evidence of duodenal catarrh or of preceding obstipation? On the other hand, do we not frequently see evidence at the bedside, and proof after death, of considerable catarrh of the duodenal mucous membrane, and sometimes of fæcal accumulation in the transverse colon, and yet never jaundice? I might also adduce the youth and health which usually mark the patient, and ask why the supposed cause of obstruction should, after a limited duration, disappear as mysteriously as it came. Nor do we gain any help in explaining the cause of simple jaundice from Frerich's hypothesis of virtual obstruction, owing to blood pressure being extremely low. In the first place, there is not the slightest evidence that in these cases blood pressure is lower than usual; in the second place, we know that the pressure in the duct of a gland is often higher than that in the blood vessels which supply it, without secretion being suspended or reabsorption taking place; and, lastly, when we do know that the blood pressure is abnormally low, as in prolonged syncope, in anæmia, and in distention of the right side of the heart from pulmonary obstruction, we do not meet with jaundice. The only case in which it does coincide with low pressure in the portal vein and high pressure in the hepatic is that of long-continued organic disease of the heart, when we find evidence of mechanical pressure on the biliary ducts.

Surely it is better, instead of accepting vague hypotheses, which it is impossible either to prove or disprove, to regard jaundice, in the absence of demonstrable obstruction, as due to some other and as yet unknown condition. We shall thus at least regard each case we meet with in daily practice as a problem to be solved, not as an example of a well-understood physiological process. The fact is that, in spite of the great advances in our knowledge of secretion, among which are preëminent those due to our distinguished Bailey medalist, Professor Heidenhain, of Breslau, much still remains to be done. The physical and chemical process, which ten or fifteen years ago seemed so beautifully clear—the blood, the basement membrane, and the secreting protoplasm, regulated by its vaso-motor and secretory nerves—though a true, is now found to be an inadequate, physiological conception. The unexpected results of partial removal of the kidneys and of complete removal of the pancreas in animals more closely allied to man than frogs or rabbits, offer new problems —we may almost say new paradoxes—in physiology, which seem as hard and, so to speak, illogical as any that we meet with in disease.

Neurotic Constipation.—In his Harveian lecture (*Lancet*, February 13th) Dr. Goodhart, of Guy's Hospital, says: Coming next to constipation, it is hardly necessary to insist that there are two predominant factors in its production—the influence of the nervous system direct, and the influence of habit. The influence of the nervous system shows itself by a phlegmatic reaction to the natural stimuli, and this may be either an action natural to the individual or an unhealthy one, due to a lowered vitality of the centers involved. There is no difficulty in establishing the power of the nervous system to determine the complaint when we consider how in several morbid conditions—melancholia in particular, but in hemiplegics, acute and chronic inflammatory conditions, andso on —one and the other keep time together; and there can be no question that, although the derangement of the bowels is an important element for consideration in promoting the cure, the morbid condition of the nervous system precedes. It is with the bowel as with the stomach; as in a case already noted, the sleeplessness always *preceded* the flatulent dyspepsia. Moreover, who has not seen several times the milder forms of nerve disturbance—the simple depression of spirits, the transient glycosuria that occur in the overworked, etc.—closely followed by obstinate constipation? It is often thought that the benefit that accrues on a good clear-out shows that some of these states are the result of fouled flues. No doubt this is so sometimes—it cannot be always; and there is no doubt that the intestine, as regards constipation, is a highly sensitive organ from which we can very often read the temperament or disposition of the man. But that is not all; it is an index of the state of nervous tone and vigor of the patient; and there is many a state of constipation that is not a case for aperients at all, but requires the liberal use of tonics. But I have something to say also on the subject of habit. It is obvious that the repeated recourse to aperients conduces to constipation and engenders a habit; but perhaps I may say this also—that, impressed as we all become as years go on of the primary importance of maintaining the purity of the primæ viæ, we sometimes forget in our advice to the patient that aperients are, after all, only a makeshift, and that they are an evil unless the good they do is undoubted. But the point I wish to make is this—that I have often been told by the chronic piller, as an excuse for the persistence in his practice of pill-taking, that he cannot leave it off, because if he does he never has a satisfactory evacuation. He appeals, in fact, to the habit he has cultivated. But I maintain that in some cases he has not fully considered the question, and that he is not always right. And for this reason: The chronic exhibition of aperient drugs, which are in most cases irritating, engenders a state of periodical excitement in the peripheral nerve endings of the intestine, and ultimately raise the unnatural condition to a natural one for them. When this time has arrived, the bowel may be described to pass through the periods of hunger and periods of satisfaction according as it is being tickled by the drug that has been given or not. The condition is one on all fours with the opium-eater's sensorium, and the bronchial tubes of the chronic asthmatic under the influence of repeated inhalation, and the mucous membrane of the habitual snuffer. And this state extends through the whole length of intestine probably; but in the present case it is the lower bowel that conveys the sensation of a satisfactory evacuation or not. If it feels the bite of a stimulant, then the individual, through his local sensations, describes himself as satisfied; when the bowel is not under the influence of the stimulant, then there is no adequate sensation of a good clearance, and the patient takes his ease in his discomfort. The bowel, like the stomach, takes kindly to good living; but when it has been used to luxury of such dainties as compound colocynth pill, calomel, aloes, and such like, it, no more than the stomach that has been fed on highly seasoned foods, likes to be deprived of them. The rectum is a very pretty judge of quality, but a very poor one of quantity. So that when a patient, after such means as this, takes to Carlsbad salts and mineral waters and says that they do him no good, and that he must go back to his old remedies, all that he really means is that he cannot control the wishes of his lower bowel any more than the opium-eater can control the craving of some of some other part, or the alcoholic his cravings.

But it is not only in constipation that the neurotic tendency of the bowel comes into play. It is even more strikingly seen, if not quite so often, in the explosive diarrhœas that are common in children, and sometimes dog the steps of the individual even to adult age. I can well remember having for some time as one of my out-patients at Guy's Hospital a poor feeble neurotic patient who was in this unhappy condition—that if any one suddenly came behind him in the street and clapped him on the back with a "Hulloa! how are you, old fellow," his bowels would promptly act. I have never seen another case so bad as that; but I have seen several where they had to walk circumspectly; and the well-recognized condition where the mucous membrane of the intestine seems to be over-sensitive and reacts energetically as soon as food enters the stomach is a similar state of things, and an indication of a temperament. It is certainly a neurotic condition, and may be remedied, as so many of the too sensitive conditions of the nervous system may be, by tonics in part, but much more, I think, by tonics with minute does of opium added to them.

A Case of General Fatty Deposit.—In an article entitled "Our Mistakes" (*Lancet*, May 14, 1892) Dr. Murray says:

Let me give a history of a case illustrating the extreme difficulty or impossibility of arriving at a certain diagnosis. I do so the more readily because I believe the case is unique.

Some years ago the late Mr. John Hope and I saw a patient suffering from intolerable pain in the testes. Both testicles were enlarged, the left as large as a goose's egg, the right slightly smaller. As the enlargement and sufferings increased, especially on the left side, we decided to remove that testicle. On doing so we found a healthy testicle encased in dense concentric layers of suet-like fat about an inch thick. The relief obtained made the patient urgent to have the right testicle removed too, which was done with complete relief. Some months afterward this man came to me again in a deplorable condition. His body was emaciated, but the abdomen had become enormously enlarged and extremely painful. The abdominal swelling was uniform and dough-like on palpation and absolutely dull on percussion, without any evidence of fluctuation. His chief symptom was a mucous diarrhœa over which remedies had but slight control. He died of exhaustion. On making a post-mortem examination, we found the enlargement was entirely due to the presence of hundreds of fatty tumors scattered throughout the folds of the peritoneum. The mesentery was a mass of them. They varied from the size of a pea to that of an orange, and each was composed of concentric layers of suet-like fat similar to that found around the testicles. The smallest were concentric as distinctly as the largest. The most remarkable developments were in the appendice epiploicæ each of which extended into the abdomen like a large bunch of grapes studded with fatty nodules. We might, if we had had a similar experience, have defined from the testicular encasements the real cause of the abdominal enlargement; but, lacking this, I think it was impossible to make a sure diagnosis.

Tamponade of the Uterus.—H. C. Coe, in a paper read before the Alumni Association of the Woman's Hospital (*N. Y. Journal of Gynecology and Obstetrics*, II., 3) of the above title, spoke of the uterine tampons first known to him as used in the Woman's Hospital, as consisting of small bits of cotton packed tightly in the uterus, and left two or three days until a discharge appeared, when they were removed, always with difficulty. In two cases, observed by him, pieces of cotton were left behind, with fatal results. The tampons at that time were used in a flabby uterus after the enucleation of sessile fibroids. The late Dr. J. B. Hunter he says, maintained the patency of the canal after excision or amputation of the cervix, by means of a plug of iodoform gauze, though this was frequently followed by stenosis requiring another operation. Polk has called attention to the value of the intra-uterine tampon in acute septic endometritis, and also chronic endometritis. Following foreign writers, American obstetricians have tested the valve of the gauze tampon in hemorrhage after abortion and delivery at term, due to atony of the uterus.

There has been a superstitious fear about invading the uterine cavity, which should no longer be entertained since we understand that sepsis, and not traumatism, constitutes the danger to be avoided. Coe summarizes the use of the iodoform gauze tampon as follows:

1. To control hemorrhage; *a*, from the non-puerperal uterus after the removal of either benignant or malignant growths; *b*, from the puerperal uterus either after abortion or after delivery at term.

2. To promote uterine contraction; *a*, in non-puerperal cases after curetting or the removal of morbid growths, where the organ remains

large and flabby and hemorrhage is feared, and immediate contraction is important. The same principle obtains in cases of subinvolution, in which the repeated application of the tampon stimulates the uterus to contraction, causing a permanent diminution in its size; *b*, in puerperal cases, as above mentioned, when the presence of a foreign body within the uterus stimulates the organ more powerfully than the astringent injection ordinarily employed.

3. To promote healthy granulation of the raw surface, left after curetting and the removal of neoplasm.

4. To secure permanent dilatation of the cervical canal, thus favoring drainage.

In the discussion following the reading of the paper, Dr. A. P. Dudley called attention to the fact that there was more risk of iodoform poisoning if gauze prepared with glycerine was used. He also spoke of the value of inserting a dry tampon in the vagina, changing it frequently. By this means much better drainage is secured. Dr. H. G. Locke recommended that form known as dry benzine-gauze for intra-uterine tampon.

THE following interesting case of backward dislocation of the head of the radius has been reported by Albert C. Barnes, A.B., M.D., Resident Physician to the Polyclinic Hospital, Philadelphia, in a late issue of *Medical News.* This is rather a rare occurrence in surgery, Markoe being quoted as having collected records of but twenty-eight cases.

W. C., six years old, fell with considerable force, and in an effort to protect his trunk from injury suddenly threw out his right arm, so that the violence came directly in contact with the palm of his hand, while his arm was in an extended and extremely pronated position—a similar history it will be observed, to that of most cases of "Colles's fracture." Ten minutes after the accident the boy was brought into the hospital, and presented the following deformity: His arm, in a position of almost complete pronation, was flexed at an angle of about 120°; his hand was also somewhat flexed and fixed. An examination of his elbow-joint, the normal contour of which was but slightly disturbed, revealed behind the external condyle a hard, resisting mass, to which a distinct rotary movement could be communicated by force applied to the distal extremity of the radius. To prove that this mass was the displaced head of the radius, we searched in the position in which the head of the radius normally lies, and detected there a slight depression corresponding with the position of the sigmoid fossa. Careful and repeated manipulation failed to elicit crepitus—thus excluding fracture of the internal condyle—a complication that frequently exists in conjunction with backward dislocation of the radius.

Attempts at flexion, extension, pronation and supination were attended with excruciating pain—a fact that would seem to indicate laceration of the capsular ligament. The treatment was very simple. The patient being etherized, counter-extension was applied to the arm, with extension of the forearm and direct pressure on the dislocated head of the bone. The latter readily slipped into its normal position. The joint was then enveloped in gauze saturated with lead-water and laudanum, an anterior extreme obtuse-angled splint applied, and the arm dressed in supination. Subsequent daily dressings show that the bone is still in position. The result thus far indicates perfect recovery, with preservation of the integrity of motion.

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MEDICAL NEWS AND NOTES.

Leprosy in the Caucasus.—In a paper read before the Caucasian Medical Society, Professor Minkh gave a history of leprosy in the Tersk district. He showed that it must have been in existence there among emigrants from the borders of the Don and of the Volga during the latter part of the last century, and that, though there are no statistics of the number of persons affected up to 1840, it must have been appreciable, as there were lazerets in a good many places for lepers. From 1841 to 1883 the disease seems to have been steadily on the increase, but after that the number of victims rapidly diminished. It is an interesting fact that in localities where lepers were kept apart from healthy persons in special buildings the numbers attacked diminished, while in other localities where segregation was not practised they increased.—*The Lancet.*

Insanity of a Professional Faster.—Succi, the Italian faster, whose tests of long abstinence from food have made him notorious, has gone mad and is now an inmate of an asylum in Paris. He attempted to give an exhibition not long ago in London, but broke down, and the disappointment of his failure seems to have lighted up the already kindled flame of mental disease, the first symptoms of which became apparent during one of his fasting performances in Florence some four years ago. After his failure in London, he went to Paris, and there was arrested one evening while creating a disturbance on the Boulevard des Italiens, proclaiming noisily that he was the mighty Cæsar.

Alice Mitchell, the murderess of Freda Ward, who showed such moral and sexual perversion as to believe herself deeply enamored of the latter, has been adjudged insane by a jury at Memphis, Tenn.

A New Formation of Antipyrine.—L. Knorr and P. Duden have announced a new method of producing antipyrine. On warming a mixture of equal molecules of crotonic acid and phenylhydrazine in an oil bath to about 115° c., a reaction begins which is accompanied by the evolution of aqueous vapor. The temperature is then raised to 125° c., and when the reaction becomes sluggish is gradually raised to 160° c., where it is kept for a short time. The end of the reaction is recognized by the fact that a small sample of the mass, when rubbed with a glass rod, easily solidifies. The two bodies have now formed a condensation product. The new body is named by the authors "phen-yl-methyl-pyrazolidon," It crystalizes in small, white needles, melting at 84° c., is easily soluble in alcohol, chloroform, toluol and glacial acetic acid. By oxidizing agents it is converted into phenyl-methyl-pyrazon, which is the mother substance of antipyrine. Adding 1 atom of oxygen, we obtain phenyl-methyl-pyrazolon.—*Pharm. Centralb.*

Measles in Japan.—There is an epidemic of measles in Tokio and other cities in Japan. The Emperor has been one of the sufferers.

Yellow Fever.—Four of the officers of the steamship Enchantress, which arrived here a few days ago from Santos, died of yellow fever during the voyage. These were the captain, purser, steward and third engineer. Although it is now winter in Santos, the disease is said to be still very prevalent in an unusually fatal form. A despatch from the City of Mexico, dated July 19th, says that yellow fever has prevailed for some time in Vera Cruz, and still continues unabated. All who can are leaving the city to escape the plague. Many deaths have occurred among the foreign colony.

The Mortality of War.—In the past century it is estimated that over nineteen million persons have been killed in the wars of civilized countries, and 1,200,000,000 during the last thirty centuries. Flammarion, the astronomer, makes some curious calculations regarding this mortality rate. The blood of the victims would amount to 18,000,000 cubic metres. This quantity of blood weighs 18,900,000,000 kilogrammes. It is an unfailing stream, which every hour since history began has unceasingly poured 680 litres of blood to dye the royal purple won by the occupants of imperial thrones. If the 1,200,000,000 skeletons should rise and climb one upon another the ladder thus formed would reach the moon, coil about that body, and, continuing onward, would mount into infinite space four times as far again, that is, 500,700 leagues in height. The corpses if thrown into the channel at Calais would form a bridge between France and England and separate the ocean from the North Sea by a weir. If only the heads of the men slaughtered in war were taken and placed side by side, a band would be formed reaching six times around the world.—*Medical Record.*

THE "KEELEY CURE" AGAIN.—The *Medical Age* has the following on this "treatment":

"The so-called bichloride-of-gold treatment of inebriety, for which so much has been claimed, and to which the newspaper press has given such prominence, proves to be a rank humbug. Bichloride of gold, though a chemical possibility, is impossible therapeutically, as the preparation reduces and becomes inert the moment the chemical bichloride transformation is effected.

"It is stated that the remedies employed by the manager of the institution which has been chiefly identified with this treatment, at Dwight, Illinois, are the hypodermic use of cocaine and administration by mouth of the so-called bichloride of gold, which a recent analysis reveals to be a weak solution of aloin in water combined with comp. tr. cinchona. The only gold used in the treatment is that supplied by the dupes in the form of fees.

"The favorable effects of this treatment are in part due to the action of cocaine, but chiefly to the mental effect on the patients, who, emotionally stimulated by faith in the promised cure, are enabled to gain temporary control of their habit. The lay and religious press have given the chief quack and his humbug an amount of free advertising beyond computation.

"The secretary of the State Board of Health of Illinois is authority for the statement that the manager of this institution at Dwight was refused a license to practise medicine in Illinois."

PROTECTION OF THE PEOPLE FROM QUACK DENTISTS, is an excellent law passed at the recent session of the New York Legislature, approved of by the Governor. It requires every dentist to register with the clerk of the county in which he practises, specifies thorough preparation for future tooth-pullers, and compels them to secure the sanction of the Board of Censors of the State Dental Society before they can follow their profession. Violation of the law makes an offender liable to $50 fine for the first offense and $100 fine and imprisonment for future violations. It is in line with the scheme of the State Medical Society to regulate and control professional practise in this State.—*The Sanitarian.*

THE STATUE TO DR. J. MARION SIMS has arrived in New York. It is a full-length figure, nine feet high. It awaits the inspection and approval of the Committee on Statues of Central Park. The sculptor, Ferdinand V. Miller, of Munich, Bavaria, has not only succeeded in making a life-like picture of the distinguished gynecologist, but has given an artistic grace to the pose which will challenge criticism. The pedestal, which will be of granite and eight feet in height, has been especially designed by the same artist, to be in harmony with the lines and purposes of the figure. It is expected that the monument, as a whole, will be completed and placed in its position within the present year, as a lasting tribute to the subject by the members of the profession of this country and other parts of the civilized world.

DR. GEORGE M. GOULD, editor of the *Medical News*, requests us to call attention to his offer of a prize of $100 for the best essay sent him, "setting forth historically and actually, the ridiculous pretensions of modern homœopathic practice." The essay, containing not over 15,000 words, and type-written, must be sent to him on or before January 1, 1893. It must not contain the author's name, but must be accompanied by a sealed letter containing the author's name with a motto or *nom de plume* (corresponding to the nom-de-plume on the type-written essay?). When the prize has been awarded, the essay will be cheaply but well printed in large quantities, and supplied to physicians at the cost of printing. We have no faith in true homœopathy, and no sympathy with that which falsely displays its banner; yet we hope that the essayists will write modestly, as there are individual "glass houses" on both sides of the fence.

IN AN ADDRESS before the Cambridge Temperance Association, a few weeks ago, Professor Humphry raised his voice against the habit of tippling or nipping—taking a glass now, a glass then, and a glass often; in the morning (which was worst of all), at the mid-day meal, in the afternoon, and in the evening. Even more than drunkenness, he said, this was terribly damaging to the system; it made men sodden, and was evinced in a general shakiness of the hand, sometimes of the step, and above all of the tongue—in fact, a general shakiness of all the organs. The "nippers" succumbed to slight accidents, slight illness, or slight shock of any kind. Prick them, and the life, as it were, ran out of them. They said, "My work is hard," and they took the very means which unfitted them for good and prolonged work. By temperance, in drink, he meant that nothing should be taken whatever, under any conditions, except at meals, and very little then. Those who could not be absolutely temperate, and content with moderation, should become total abstainers.—*Brit. Med. Jour.*

Virginia Medical Law.—The Supreme Court of Virginia has decided that the medical law of the State is unconstitutional. The case before them at which this decision was given was that of a largely advertised doctor from Boston, against whom complaint has been brought by the State Medical Board, alleging that he had no right to practise under the laws of the State.

Prophylaxis Against Nephritis Scarlatinosa.—Dr. Ziegler (*Berl. kl. Wochenschrift*, January 11, 1892, p. 25) refers to the value of milk diet in the treatment of nephritis, especially in its acute form, and that in children it is very easy to carry out this line of treatment. Henoch, Senator and Baginsky are each quoted in support of this statement. Dr. Ziegler gives the results of his experience and observation for a period of six years as physician to the Military Orphan Asylum at Potsdam, during nine epidemics of scarlet fever. In uncomplicated cases, his reliance was entirely upon a milk diet and rest in bed, in order to avoid catching cold. The favorable results led him to use it as a prophylactic against the development of nephritis during and after scarlet fever. Milk acts as a gentle diuretic and is at the same time a nutritious diet, which can be said of no other means at our command.

His mode of treatment is as follows: At the beginning of the attack, when there is high fever and loss of appetite, the milk is diluted with seltzer or soda-water. This, with water gruel, comprises the only treatment in uncomplicated cases. After a few days when the desire for food returns, zwieback or rolls are given with the milk. The amount of the milk is only limited to the appetite of the patient—sometimes one and a half to two liters being taken in twenty-four hours. This diet is continued till the end of the third week, when other nourishment is gradually added. No statistics from his private practise are given, for the reason that he felt that they would not be reliable, as the patients could not be under absolute control. The study of the orphan asylum statistics covers the period from 1875 to 1892. In the nine epidemics there were 218 cases of scarlet fever; 115 cases occurred before the introduction of the "milk diet treatment." More than half of these had kidney complications during or following the acute disease. And it is further recorded that many of these were of an extremely light form. In the second category there were many cases of great severity, some of which died in three or four days, but there was no development of renal complication during the stay of the patients in the hospital.

In private practise he found it difficult to confine patients to an exclusive milk diet, as they soon grew tired of it. In such instances he allowed farinaceous food with the milk.—*Brooklyn Med. Journal.*

THE LATEST THING IN SUICIDES.—Novelties in the suicide business have been plentiful enough of late. High jumps, ropes, pistols, poisons and holes in the water will soon be out of fashion. Marguerite Borel has just introduced a new style, *fin de siècle* beyond a doubt. Her faithless lover, Paul Convert, deserted her. Marguerite didn't want to live, so she purchased in different drug stores an immense stock of leeches. Then she went home to her nice little apartments in Boulevard de la Villette, Paris, where she undressed, liberated the leeches and applied them all over her body. In other words, she modestly made an overcoat of them. Next morning she was found still alive and taken to the Lariboisière Hospital, where she died.—*The Sun.*

THE DIFFERENCE BETWEEN DRUNKENNESS AND INEBRIETY is stated by M. Trelat thus: "Drunkards are the people who drink whenever they find an opportunity for drinking; persons affected with inebriety are diseased, and drink only when the attack seizes them." Drunkenness is a vice; inebriety a disease.—*Ex.*

ON THE TORSION OF ARTERIES.—In connection with operations for excision of tumors, and other excisions of a like character, Jonathan Hutchison remarks as follows: "I may mention that for many years I have quite ceased to use any other means for arrest of arterial bleeding than torsion. In excision of the breast, for instance, I do not think that I have, during the last fifteen years, ever used a ligature. The torsion is always effected by a pair of Well's clamp-forceps, now in such universal employment. I am always extremely careful to close all vessels, keeping the wound exposed for a considerable time for that purpose. Very seldom, indeed, have I encountered any secondary hemorrhage."—*Archives of Surgery.*

INEBRIETY AND MEDICAL PRACTICE.—A Cincinnati evening paper, commenting upon the Georgia law concerning physicians addicted to alcohol, says that legislation of a similar kind is needed in Ohio, as a few days since a Cincinnati physician was taken off the streets suffering from delirium tremens, while still another was locked up in the workhouse convicted of habitual drunkenness. And one of the most prominent men in the Cincinnati Medical Society, some years ago, conscious of his consuming appetite for rum, invariably wrote his prescriptions twice, each time keeping a copy, thinking thus to escape any mistake which he was fearful he might commit while intoxicated.

A BOOMERANG.—A quack in a Western city advertised that he had treated some thirty cases of diphtheria during the previous month, and had cured every one of them. He was thereupon arrested, and is to be prosecuted by the Board of Health for having failed to report the cases. —*Med. Record.*

Dr. Holmes and Preventive Medicines.—In a recent letter Dr. Oliver W. Holmes says: I am an out-and-out believer in preventive measures against disease as contrasted with what are called curative agencies."

A naturally frail physical organism has sustained his active brain in its grand work with a minimum of drugs and a maximum of prophylaxis. With a most happy temperament, great simplicity and regularity of habits, he has passed his fourscore years and is still hale in mind and body. He praises the bridge that has carried him safe.

The Practise of Medicine in Maryland.—The bill to regulate the practise of medicine in Maryland has become a law. This law practically confirms the Medical and Chirurgical Faculty of Maryland in its ancient authority as a licensing body; not in its original extent for all practitioners, but in a limited degree for all future practitioners except homeopaths. The promoters of the bill deserve the thanks of the medical profession of the State and of the whole country.—*Medical Record.*

A Proposed Remedy for the Dispensary Abuse.—Dr. W. E. Dawson, writing to the *Hospital Gazette*, suggests that at every dispensary and hospital a register be kept, easily accessible to local medical men, giving the names and addresses of all patients attended during a given week. "Medical men would thus become so many unpaid inquiry officers of the institution; and the secretary could then always reply to complaints of abuse."

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BOOK REVIEWS.

Diseases of Women: A Manual of Non-Surgical Gynecology, Designed Especially for the Use of Students and General Practitioners. By F. H. Davenport, A.B., M.D., Institution in Gynecology, Harvard Medical School. Second edition revised and enlarged, with numerous illustrations. Philadelphia: Lea Brothers & Co., 1892.

The Journal has on several occasions expressed its disapproval of the tendency of recent years to the multiplication of short manuals and compends upon medical subjects. They are as a rule superficial and incomplete and are productive of harm rather than good. The present work, from its size and scope, might readily, in many hands, have been highly objectionable, but the admirable tact of the author has given us a most excellent book. By omitting surgical gynecology and conditions of rare occurrence, as well as discussions on obscure and disputed points and pathological anatomy, much space has been saved. Much attention has been paid to the description and elucidation of seemingly minor but actually very important points which are not found in ordinary text books. The pages devoted to methods of examination are deserving of the highest commendation, as well as those devoted to a description of instruments and general methods of treatment. While not over-elaborate, they are explicit and markedly practical.

Discussion of the various gynecological diseases and disorders presents of course many points upon which authorities differ and which might invoke criticism. The author is a firm believer in pessaries, but is entirely reasonable upon the subject and his advice, is sound and practical. The whole work is in fact eminently practical, being devoted almost exclusively to symptomatology and treatment. It is upon the latter subject that the value of the book chiefly lies. Surgery has occupied such a large and exaggerated place in gynecology of late years that many men have come erroneously to regard it as the only treatment. The sooner this idea is dispelled the better for suffering womankind. The great majority of women suffering from pelvic disorders may be releived or wholly cured by non-surgical treatment. The author has certainly done a great work in describing such methods of treatment so satisfactorily.

A Clinical Report of Operative Surgery in the service of Dr. William T. Bull, at the New York Hospital. By William B. Coley, M.D., late House Surgeon. Reprinted from numerous issues of the *New York Medical Journal.* New York: D. Appleton & Co., 1891.

A vast amount of excellent clinical material passes through the great city hospitals unutilized. The idea of reporting interesting cases with photographic illustrations as they occur in the service of a great surgeon is an admirable one. Many cases are thus put upon record that would otherwise be lost. In the presence instance the work is extremely well done. Three hundred and twenty-six operations are reported, the greater number being upon the abdomen. There were 34 cases of hernia and 20 tumors of the breast, other cases being those naturally appearing in a general surgical service. Cases of minor importance receive but little attention, while those of greater interest are admirably described. The author has been very successful in his endeavor to avoid verbosity on the one hand without sinking to the level of mere statistics on the other.

ELEVENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF ILLINOIS, containing the Official Register of Physicians and Midwives. Springfield: H. W. Rokker, 1892.

The report of Illinois Health Board is always of interest and contains material of much value for the student of public health. The official register of legally qualified physicians, which is arranged in two divisions, alphabetically and according to countries, must be of the utmost value to the practitioners of the State. To others the medical laws of Illinois, which are among the best in the Union, are of interest. Comments upon yellow fever and methods of quarantine form an important part of the present report.

SURGICAL TREATMENT OF INTUSSUSCEPTION. By N. Senn, M.D., Ph.D., Professor of Surgery in Rush Medical College, Chicago. A paper read before the Ontario Medical Association, June 3, 1891. Toronto: The J. E. Bryant Company, 1891.

Intussusception is a disease so sudden and unexpected in its onset, so rapid in its course and so fatal in its results, that the profession must welcome anything regarding it from such an experienced and practical man as Dr. Senn. He acts upon the proposition that he is dealing with a strictly surgical affection which should be treated as such from the beginning on the same ground as a strangulated hernia. He promptly arrests peristalsis by at once emptying the stomach by emetic or irrigation and by the administration of opiates. Disinvagination is most efficiently and safely procured by rectal insufflation of hydrogen gas or filtered air. If employed early it will prove successful in the majority of cases. Inversion of the patient and the use of an anæsthetic will render the procedure more certain. Laparotomy should be performed as soon as the irreducibility of the invagination has been demonstrated by rectal insufflation.

OPERATIVE TREATMENT OF GOITRE. By J. Collins Warren, M.D., Mass.

THE PAST, PRESENT AND FUTURE OF OUR ASSOCIATION. By Claudius H. Mastin, M.D., LL.D., Univ. Penn.

THE NECESSITY OF EARLY CORRECTION IN CONGENIAL CLUBFOOT. By H. Augustus Wilson, M.D.

ANNOUNCEMENT 62ND SESSION, 1892–'93. Albany Medical College.

SELF EXAMINATION FOR MEDICAL STUDENTS. By George M. Gould.

POSTURE THE HANDMAID OF MEDICINE.

THE HUMAN BODY THE TEMPLE OF GOD.

THE WILLIS EYE HOSPITAL REPORT OF YEAR ENDING DEC. 31, 1890.

THE TREATMENT OF TUBERCULOSIS OF BONES AND JOINTS. By N. Senn, M.D., Ph.D., Chicago, Ill.

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EDITORIALS.

THE NERVOUS DISEASES OF EARLY LIFE.—The nervous diseases of childhood and early adult life are numerous and very important. They have received attention from various writers of late, but the work of none has equaled in practical value that of Dr. Clouston, of Edinburgh. The subject is of especial importance to the general practitioner or family physician, because these disorders always fall to his care in the early stages at least. Diseases of the brain and nerves are complex, and at the same time interesting for many reasons. The mode of development of brain and nerves is different from that of any other organ. For example, the kidney of the infant, while not as large, is as perfect in development and functional activity as that of the adult. The brain of a child of seven years has attained its full weight to within a few ounces, and its maximum weight at seventeen. But the brain of the child differs so greatly from that of the educated adult in its functional power that it might almost be thought to belong to a different species of animal so far as its essential qualities go. The first seventeen years of life is a period of both growth and development; from that age to full maturity, which may be late in life, is a period of development alone. Observation shows that the most serious disturbances in the functions of the brain are certain motor, sensory and trophic neuroses incidental to this period of development. They have been grouped, therefore, by Dr. Clouston and designated Neuroses of Development—a most appropriate title. By this method of classification and study the relationship and interdependence of many of these diseases is shown to be very close, and valuable lessons may be learned regarding their prevention and treatment.

That many, perhaps all, of these defects of development are hereditary can hardly be doubted. Certain defects are characteristic of certain periods. The first of these periods is embryonic life *in utero*. Here we find the numerous defects due no doubt to deficient nerve activity, over nutrition—hare-lip, cleft palate, spina bifida, acephaly and genetic idiocy. At birth there is a great crisis, at which the test occurs as to whether independent life is possible under new circumstances. The period of excessive brain growth and development during the first seven years is marked by numerous nervous disorders. This is also the period of special sense education of motor co-ordinations, as in walking and of speech. The neuroses of this important period are convulsions, night terrors, epilepsy, infantile paralysis, rickets, hydrocephalus, tubercular meningitis, certain varieties of idiocy and imbecility, and a marked susceptibility to the action of micro-organisms and zymotic poisons. A brief study will show that these diseases are all connected more or less closely with the immense brain growth and development of certain brain functions of the period.

The next period, from seven to thirteen, is marked by but little brain growth, but the emotions are developed as well as co-ordination of emotion. During this time we meet with chorea, epilepsy, asthma, somnambulism, megrim, myopia and strabismus.

The period from thirteen to twenty-five is a most important one. Epilepsy, asthma and megraine may appear for the first time. In addition to these we see chlorosis, hysteria, phthisis, adolescent insanity, impulsiveness, perversion of the moral sense, frothy religionism, perverted sexual instincts, arrested bodily development, and numerous other pathological or abnormal conditions.

In nearly all these neuroses to which children and young adults are subject, heredity plays a very important part as a predisposing course. In certain instances it is the sole cause, the disease being inevitable during the period of development. But heredity is always a question of degree and intensity. Fortunately it is not often sufficiently intense to cause disease unaided. In most cases an exciting cause is required to develop the diseases that are its outcome. This opens a large field of preventive measures against the adolescent neuroses, and one or two general principles may be formulated. Build up the bones and fat and muscle, especially the fat, by every possible means. Make fresh air the breath of life to the young. Develop lower centers rather than higher ones when there is bad heredity. Give flesh and nitrogenous food sparingly, avoid alcohol and nervine stimulants absolutely. Restrain rather than cultivate the imaginative and artistic faculties, the sensitiveness and idealisms generally in cases where they tend to appear too early and too keenly. They will be rooted on a better brain and body basis if they come later. Cultivate and insist on order and method in all things. The weakly neurotics are always disorderly, unbusinesslike, and unsystematic. Correction of these tendencies is a most important feature of treatment.

THE MEDICAL MAN AND A COLLEGE EDUCATION.—The question of collegiate education is a very important one, not only to the young man who has decided to study medicine but to the medical profession at large. The advantages to the professional man of college training are universally acknowledged. The constantly advancing standard of requirements in our better colleges is uniformly approved. The statement, at first thought, may seem very strange that these advanced standards are not wholly advantageous to the medical profession. The matter has reached a point which causes deep thought and serious concern among educators. The tendency of these modern methods is to make it more and more difficult for young men to go through college before studying medicine. It is a fact that a decreasing proportion of the graduates of our great colleges are studying medicine. The medical department of Harvard has upon its rolls a very small and decreasing number of graduates of the university.

The requirements for admission to our leading colleges and so-called universities have been increased steadily from year to year; the four years' course is crowded and the standard of excellence is high. The result is that the average age of graduation has steadily risen and in many institutions is over twenty-two years. It is only young men who have enjoyed exceptional advantages who can enter unconditioned at eighteen. Upon graduation our young man enters a medical college where a three years' course is demanded, and upon graduation here, if he is ambitious and successful, secures a position upon the staff of a hospital where a year and a half or two years more are consumed. Thus he is 27 before he is in a position to earn a dollar. If he now settles in a city or large town, as he probably will, unless especially fortunate, three years at the least must pass before he is assured of a supporting practice. This means that the young man who is ambitious to excel and to stand high in his profession must not expect to be self-supporting before he is thirty. The support of a family is a question to be considered still later in life. The matter is made worse by the fact that the medical student's expenses are abnormally heavy. The young business man earns a salary from his first day of employment, though at first it may be small. The law student acts as clerk or teaches during his course of study even if he is a matriculant of a law school. No medical student can think of doing outside work while in college from September to June, while the members of a hospital staff are rigidly prohibited from receiving fees from any source.

All this is absolutely prohibitory of a college course for the average young man who desires to study medicine but must rely wholly on his own resources. With a little aid, an energetic and determined man can do it. With one or two years stricken from the earlier part of the course, many would accomplish the task who cannot master it now.

The question has been very earnestly considered, therefore, whether it would not be better to so modify the college course as to induce a larger number of professional men to attempt it. The discussion of this subject has brought up the whole question of the American college course. The great American colleges are anomalies; they are neither college nor university, being far more than the one, and far less than the other. Criticism of great institutions, the result of years of development, seems unbecoming. But there can be no question of the fact that the system that has been developed at Harvard, Yale and other great schools is not adapted to the needs of the ordinary man who is to study medicine. To be sure the fact is coming to be recognized that the doctor and the lawyer, the business man and the engineer, require a different training even before definite special study is begun, and so optional courses and studies are permitted. The same criticism applies to most of these, however. They require too much. The college, which should supply a good sound basis of general knowledge, is not differentiated from the university, which should furnish broad training along special and definite lines.

The remedy lies in two directions. There is good reason to believe that the larger colleges will in time so modify their courses that the student who is to spend several years after leaving them in the study of special branches may obtain his degree in less time than that required for the full course. This plan has been definitely discussed and is a consummation greatly to be desired. It means that the college education shall end at less than twenty-two and the university education begin. In the mean time it seems far wiser for the young man of moderate means to seek a good, sound education in a smaller but genuine and reputable college where the standard of admission is not as high. Let him not feel that he is making a sacrifice. He is taking a most rational course. It is much wiser to cut off a year or two from the college course than from the university course. At thirty five he will be in a better position in every respect than though he had attempted to struggle through a long and elaborate college course with shortened or restricted professional training. But by all means let him go to college if possible.

CHOLERA continues to make rapid advancement into Eastern Europe. It has been for some time actively at work at Baku and Astrakhan and has ascended the Volga as far as Kazan. It is unquestionably at Moscow, and a death has occurred at Trieste from what is thought to have been cholera. Numerous deaths have occurred along the railroad across the Caucasus Mountains. This road was built by

Russia to extend her power into Asia, but is now proving an admirable highway for the march of a dreadful scourge. Under old methods of transportation the disease had time to develop itself on shipboard under comparatively favorable hygienic circumstances, and could be checked with comparative ease at quarantine stations. It is now brought by rapid transit, under the worst of hygienic conditions, far into the country before it develops itself. This multiplication of railroads in the far East is one of the most serious elements to be considered in the present spread of the disease.

The condition of Russia, with its famine-stricken millions, is now more than ever a menace to the whole world.

The chief danger to this country is by way of Hamburg, which lies dangerously near Poland. The most strict precautions are being taken at the German frontier, but it is not improbable that cholera will pass before the end of the summer. There is some ground for the belief that the same precautions are not observed with regard to emigrants bound for the United States by way of Hamburg and Bremen. It is, however, very improbable that the disease enters this country, though it is quite possible that cases may appear at our quarantine stations. There is certainly no ground for the fear of an epidemic here at any time; certainly, not during the present season.

Dr. Keeley is now in England, and as was expected of the man, has not hidden his light under a bushel. He has been holding great meetings under the auspices of the Church of England's Temperance Society, and has gained a wide notoriety for the chloride of gold cure, which he has himself virtually admitted contains no gold. The following amiable remarks are from a recent member of the *Lancet.* "Truly the methods adopted by some American physicians astound us. The running of a secret cure for one's personal profit would in this country insure the erasure of the inventor's name from the roll of any college of physicians or surgeons, university, or medical society with which he might be connected." The *Lancet* is evidently not a reader of American medical literature. Possibly it does not lose very much, but it certainly should inform itself as to the facts before writing upon a subject with such positiveness. It would not find the name of Dr Keeley upon the roll of any reputable college, university or medical society. It would not find an American medical journal supporting him in his methods of advertising his cure. It would find that the sentiment of the profession was voiced by editorials published months ago in Gaillard's Medical Journal, in which, while the efficacy of the treatment was acknowledged in some cases, the methods were condemned as those not employed by honorable physicians, and as opposed to every principle of medical ethics. The JOURNAL has seen no reason for modifying the views then expressed upon this much-discussed subject.

A SERIES of experiments regarding the hereditary transmission of mutilations recently reported by Dr. C. G. Lockwood, of New York, are very curious and of considerable practical value. White mice, on account of the rapidity with which they breed, were chosen. Breeding occurs in these animals every thirty days, and ninety-six generations were reared. By selecting the best specimens and destroying the weakly ones, the breed was materially improved. A successful attempt was made in breeding off the tails. One pair was separated from the rest and their tails were clipped. This was continued for seven generations, when a few mice were born without tails. After a few more generations, a tailless breed was obtained, perfect in every other respect. By taking a mouse with a tail and one without, and continuing in this way for several generations, the sexes being alternated in each generation, a breed resulted having tails of normal length.

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ORIGINAL ARTICLES.

ARTICLE I.

THE TREND OF MODERN NEUROLOGY.[1]

By L. BREMER, M.D., St. Louis, Mo.

Although the study of cerebral localization still holds a conspicuous place in neurological literature, there are signs of abatement of interest in this direction, owing, no doubt, to the natural reaction which is bound to follow in the wake of all great expectations. The ups and downs of medical theories and practices are vividly illustrated by the study of the literature on this branch; especially, in its practical bearings, neuro-surgery. By the inadequacy of practical results the enthusiasm on the subject is damped somewhat in those quarters where it found its most ardent support and ablest exposition.

But, like fashion in other things, it will now run its course in the rural districts after it has spent some of its fervor in the large centers of population. In spite, however, of the many disappointments it has brought, the last six or seven years,—its storm and stress period,—will be memorable ones in the history of medicine for the persistent, gigantic and daring work that has been done in the domain of brain-pathology and surgery.

As all the branches of a science, that of medicine not excluded, are correlated and interdependent, it becomes intelligible how the special cultivation of one branch of this science has a stimulating and fructifying effect upon collateral ones.

Thus, the immediate result of cerebral surgery was a renewed impulse to investigate the organ of the mind etiologically and anatomically for changes underlying such diseases as the profession were long familiar with, but of the true and tangible nature of which they were ignorant. There are above all certain nervous affections, the clinical symptoms of which have been studied and described with the minutest detail, but which until very lately were looked upon as the unimpregnable remnant of true neuroses, i.e., such as had escaped the weeding-out process which under the stimulus of bacteriology has been steadily going on since the beginning of the last decade. One of these—idiopathic epilepsy, so-called—seems now, too, almost ripe to enter the list of those nerve-diseases which have attained the dignity of a nosological entity, i.e., diseases of which we know not only the symptom-grouping, but also their anatomical substrata. The more extensively and the more minutely, with the modern improvements of staining nerve-tissue, the brains of epileptics are examined with the microscope, the firmer becomes the conviction that epilepsy is not dependent on a molecular-change only, but that the morbid state in the cerebral substance which gives rise to epileptic seizures is in many instances, probably in all, due to if not a coarse at any rate a demonstrable lesion. This consists in disseminated sclerotic patches, which of late have been met with in brains of patients that had suffered from "genuine" epilepsy. I myself have in two cases been able to demonstrate such sclerotic changes both in the cortex and the subcortical ganglia in the brains of persons thought to be true epileptics; those brains looked perfectly normal to the naked eye, but presented sclerotic foci on microscopical examination. Demonstrable changes, then, due to traumatism, embolism, hemorrhage, and especially lesions of the brain in infancy, will at no distant day be recognized as the chief pathological factors in epilepsy. Even where the disease is inherited, it is probable that organic changes will be found underlying the disorder. The same is true of many cases that still are diagnosed as hysteria ; and others, that are as yet called neurasthenia, will probably follow.

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[1] Being a report on the Progress of Neurology, read before the Missouri State Medical Association May 17, 1892, at Perth Springs, Mo.

I alluded above to the "weeding-out" process of the neuroses in nosology. This is a subject which might profitably be dwelt upon at greater length.

When we examine the text-books and the literature of neurology prior to the last decade it is astonishing what number of "functional" nervous diseases we meet with.

Thanks to the marvelous progress in the knowledge of the nature and life habits of pathogenic bacteria, we now know that the large majority of the "neuroses," erroneously so styled, are either bacterial infections or the result of tissue-changes produced by former microbic invasions of the human organism.

Thus, what was formerly called "essential spinal infantile paralysis," and after its anatomical nature had been discovered, "poliomyelitis anterior," is now without much doubt looked upon as a bacterial infection; the same is true of chorea, tetanus, some forms of neuritis, etc.

Together with the bacteria and their products as disease-producers the doctrine of the toxines as morbid factors, especially in nerve-disorders, has developed *pari passu.*

The paradigmata of such toxic affections of the nervous system are those caused by alcohol, by urea retained in the blood, and a number of metals—lead, mercury, etc. The changes, inflammatory and degenerative, which these substances produce on nerve-centers as well as peripheral nerves, have been thoroughly studied of late years both clinically and anatomically, and many affections which before were regarded only as functional have been firmly planted on an anatomical basis by investigators.

After an understanding had been reached of the pernicious effects of the poisons derived by metabolic processes from certain bacteria, such as the tetanus bacillus, the typhoid bacillus, the pus-microbes, etc., by demonstrating the changes wrought by them in the nervous and adneural tissues, and by experimentally testing their elective affinity for certain nerve centers and tracts, the inference was near at hand that the same, or analogous, changes might be produced by poisonous substances generated in the body independently of pathogenic bacteria, and thus arose the conception of the auto-intoxications.

The prototype of these is met with in certain forms of headaches arising from fermentative and decomposing processes in the stomach and intestines. The further study of the normal and abnormal phases of digestion led to the observation that certain bye-products of the digestive process, especially those resulting from a decomposition in the small intestines of albuminous bodies, tyrosine and leucine, e.g., were nerve poisons. The study of the leucomaines as nerve poisons attracted widespread attention several years ago, and now it is the toxines arising from food substances in the process of (abnormal?) digestion, their absorption by the blood, and their deleterious action on the nerves that engage in their study the neuro-pathological talent of the world.

These auto-intoxications do not only set up irritative symptoms in such diseased conditions as neurasthenia and hysteria, aggravating and complicating them, but certain forms of paralysis and pronounced spastic seizures must be set down as resulting from the absorption of paralyzing and convulsive substances generated under certain abnormal conditions in our bodies.

The practical advantage which such knowledge entails cannot be overestimated. With a better understanding of the pathogenic role of these albuminous derivatives very important modifications in nourishing the sufferers from nervous disease have been introduced.

Above all, the fatal blow has been dealt to the greatest of all abominations in the sick-room of nerve-sufferers and the most pernicious delusion of the medical profession—I mean beef-tea and allied preparations, beef extracts, etc. Unfortunately, like all superstitions, this one is tenacious and long-lived and will continue its destructive work for some time.

A dietetic reform, then, is the immediate and future outgrowth of this study of perverted digestive and metabolic activity. The abnormalities of the latter especially have not been sufficiently appreciated as yet, although the advance in our knowledge of the products of faulty metabolism giving rise to the arterio-capillary sclerosis in Bright's disease, *e.g.*, which, by its uræmic complications, is capable of mimicking the symptoms of almost all nervous diseases, points out the direction in which future work will have to be undertaken.

In this connection it is interesting to note that of late the attention of observers has been directed to the toxicity of excretions in the insane.

It has been found that in all cases of insanity, with the sole exception of senile dementia, the toxic properties of the urine as compared with those of the healthy subject, are increased. Maniacal patients, *e.g.*, furnish highly poisonous urine passed during excitement, whereas that voided during the quiet moments was found to be less toxic. As a general proposition it may be stated that, whatever the cause of the psychical affection, the urine always contains extraordinarily toxic properties, which, when injected into the blood circulation of rabbits, produces a stuporous condition, coma, epilepsy, hyperæsthesia and hyperexcitability of the motor apparatus.

In addition to these highly interesting and important facts other investigators have found that the night and day urine are almost antagonistic, the former having a narcotic effect, the latter causing spasms in animals.

The examination of blood, both chemically and morphologically, has also received new impulses of late, and it seems to me that at no distant day it will play a part in the differential diagnosis of certain nervous affections. Already we are enabled to differentiate between the chills of malaria and the so-called "nervous" chill which resembles the former so much by the presence or absence of the plasmodium malariæ in the blood, an achievement which a few years ago would have been deemed impossible.

Everything, therefore, is pointing to greater exactness, an increased clearness in our understanding of nervous disease, and all true attempts at progress in this branch tend to impress more forcibly than ever before the important truth that special diseases can be understood only by comprehending the diseases of the organism as a whole.

This tendency to divest nervous disorders of their former exceptional status in nosology, and to broaden neurological views on a sound pathological basis, is at times counteracted by neurologists who in their zeal to demonstrate the great importance and too little appreciation by the profession of their specialty would fain annex with few exceptions all diseases as being nervous in origin and nature.

Thus, for instance, malaria, cholera and tuberculosis have been even lately claimed as nervous diseases. Such attempts are devoid of sound pathological reasoning and contrary to the accepted teachings of to-day.

Owing to the great impressionability of patients afflicted with nervous disorder, the field of nerve disease has ever been the vaunting ground of imposition and humbug. The latter, it would seem, is to-day officially and scientifically sanctioned by the introduction and recognition of suggestion as a therapeutic agent. It must be admitted that by the adoption by the neurologists at large of this element of cure a very important addition to our therapeutical resources has been made. This does not, however, imply that the parent of suggestion, hypnotism, ought to play the part which some assign to it.

In determining the value of a remedial agent as a whole, we have to weigh the possibilities of its injurious and beneficent influences, and, if the former entirely overshadow the latter, it is better to drop such measures. Hypnotism is of this nature. I compare it in its power for harm to the hypodermic needle. No doubt some lives have been saved by the syringe; but looking at the havoc it has wrought among the neurotics by increasing the army of morphinists, and in view of the peculiar fascination which this little instrument exerts over the nervous, and the powerful weapon it has become in the hands of the quacks, treatment of alcoholism, etc., it would be better for humanity if it never had been invented. The same holds true, only in more extended way, as regards hypnotism. While it is advisable to acquaint oneself with the phenomena of this strange mental condition in persons who suffer from it as a disease, in the same manner as we study morbid phenomena that present themselves to us as accomplished facts, we ought not to provoke it where it is dormant. At best one affection is substituted by another, as a rule a worse one. I consider it quite complimentary to American neurologists that they have not kindly taken to this medical fad, and left its employment as a remedial agent to outsiders and those young and over-confident healers in our profession who, like Pallas Athene out of the head of Jove, jump from the medical college into practice, accomplished nerve-specialists and hynotizers. In the vast majority of cases where it might be indicated, simple suggestion does all and even more than hypnotism, and the cultivation of sanguine temperament in the neurologist will stand very well in place of what is at best a species of mummery savoring of and leading to humbuggery. The introduction of hypnosis as such into therapeusis is, to my mind, not to be classed as progress.

It will be observed that in the foregoing remarks I have omitted names and touched only on a few subjects illustrative of the modern trend of neurological science. The names of authorities I left out, because in mentioning some I would have been compelled, for the sake of impartiality and accuracy, to add others, a completeness foreign to the scope and object of the paper. Again, as to subjects, I had to confine myself to such as I thought would interest the practitioner who has no time to delve into details but tries to keep abreast of general progress in medicine.

ARTICLE II.

NITROGLYCERINE — SYNONYMS: GLOUVIN, GLOUVIN ORE, TRINITRIN, DYNAMITE. BLASTING GELATIN, ETC.—ITS HISTORY AND USES IN KINETICS AND THERAPEUTICS.

By T. G. Stephens, M.D., Sidney, Iowa.

The present age has no parallel in all preceding ones for the number of its valuable and praiseworthy institutions and remedial applications to ameliorate the condition of man. To the truth of this, history and other forms of authentic record testify. Nor do the activity and zeal with which those associations are administered fall short, in degree, of the benevolence which prompted, or the wisdom which planned them. Many of them, therefore, have been eminently successful in the attainment of the ends for which they were established. Nitroglycerine, $C_3H_5(NO_2)_3O_3$, is a yellow or nearly colorless, heavy, oily, odorless liquid; taste sweet, pungent and aromatic; if it be touched with the tongue or even come into contact with the skin, severe headache ensues, but this effect does not recur after a while with those who habitually handle it nor is their health permanently impaired by working with it—its toxicological properties being that of an irritant poison. Detonation was applied by Noble to the explosion of nitroglycerine. Even then, however, the liquid nature of the substance though advantageous in one or two directions constituted a serious obstacle to its safe transportation and storage and to its efficient employment in industrial pursuits. It was therefore not until Noble hit upon the expedient of producing plastic solid preparations by mixing the liquid with solid substances in a fine state of division capable of absorbing and retaining considerable quantities of it that the future of nitroglycerine as one of the most effective and convenient blasting agents was secured. Charcoal was the first absorbent used ; eventually the silicious (infusorial) earth known as "*kieselguhr*" was selected by Noble as the best material for producing dynamite, as it absorbs, after calcination, from three to four times its weight and does not part with it easily when the mixture is submitted to pressure or frequent alterations of temperature. For work requiring the greatest sharpness and violence of action the so-called No. 1 dynamite, consisting of about 75 parts of nitroglycerine and 25 parts of *kieselguhr* is by far the most extensively used ; other inert absorbents have been used at times and numerous other less violent forms of dynamite are prepared by impregnating mixtures of oxidizable substances and oxidizing agents with smaller proportions of nitroglycerine, or using imperfectly nitrified wood-fibre or other forms of cellulose as the absorbent. Liquid-dynamite was the one employed by the Fenians in the attempted outrages in Glasgow and London in 1883. Magnesia alba as an inert absorbent of nitroglycerine is the only one which compares in efficiency with *kieselguhr* and is used extensively for making dynamite in California. The most recent and most perfect form in which nitroglycerine is now used is called blasting gelatine, and is composed of the liquid and of a small proportion of the so-called nitro cotton, which consists chiefly of those products of the action of nitric acid and cellulose which are intermediate between collodion-cŏtton and gun-cotton (trinitro cellulose). Blasting gelatin is rapidly replacing dynamite in some of its applications and is already extensively manufactured in different countries. The compounds of nitroglycerine have been employed in the largest blasts that have ever been made ; the most notable one of all was Hell's Gate, New York, on Sunday, Sept. 24, 1876, at 2.50 P.M.

Nitroglycerine was first discovered about the year 1852 by Dr. Sobers, professor in Turin, and afterward made a study by Dr. de Vriij, of the Netherlands, Dr. Gladstone and Dr. Knapp, but did not attract general attention until after 1864, when its great capabilities as an explosive agent became known. In an alcoholic solution (spiritus glonoini) it is said not to be explosive, this being the most common form in which it is used in therapeutics, in doses of one to two drops, gradually and continuously increased. "Trinitrin" is the scientific term adopted on the continent of Europe for nitroglycerine in writing prescriptions, in order to prevent too frequent criticisms by the clientèle.

The action of the nitrite of amyl on the animal economy and that of nitroglycerine are very much alike, but the former is not so satisfactory. It is said that fifteen drops of the ten per cent. solution of nitrite of amyl injected under the skin produces equal physiological and therapeutic effects as when given by inhalation ("Annals of Gynæcology and Pædiatry"). Nitroglycerine does not depress the blood pressure so powerfully, and its influence is felt for a much longer time. Physiological action: Giddiness, weakened vision, headache with throbbing in the temples, a sense of weariness, sleepiness, severe pain in the cardiac region and unusual trembling. Antidotes: Strychnia, ergot and belladonna. In favor of nitroglycerine is smallness of bulk, and as a quick stimulant it has no peer. In great haste one drop of a one per cent. solution may be placed on the tongue or on the inside of the upper lip when the patient is in an unconscious condition. Its effects are immediately observed by the capillaries carrying more blood than they had done before its administration, the radial pulsations grow fuller, freer and more rapid, and there appears an increased warmth of the extremities. Dr. Murrill, of London, says concerning the method of administering nitro-glycerine that the one per cent. alcoholic solution may be given in a drachm of water or in any quantity that may be found most convenient.

In some cases I have given it with a few drops of spirits of chloroform, in peppermint water, and this mode of administration is advantageous when anything cold excites or intensifies the paroxysm, the spirits of chloroform and water not only taking off the coldness but relieving the flatulence which is so commonly an accompaniment of the attack. The nitroglycerine pills made by Parke, Davis & Co., of Detroit, Michigan, are perfectly active, and are taken without difficulty. They are sent out in small bottles containing one hundred or more, and may be obtained either sugar-coated or gelatine-coated, the latter being preferable; they are made of seven different strengths–gr. $\frac{1}{200}$, gr. $\frac{1}{150}$, gr. $\frac{1}{100}$, gr. $\frac{1}{50}$, gr. $\frac{1}{33}$, gr. $\frac{1}{25}$, gr. $\frac{1}{10}$—and they look well. Since Dr. Murrill wrote concerning these pills P., D. & Co. have added tablet triturates 1-100 and 1-50 gr. to their list; they also supply the one per cent. alcoholic solution. Concerning the proper dose of nitroglycerine, Dr. Murrill says it is impossible to lay down any definite rule. As a rule, one minim is a safe dose to begin with, but it would be better to be quite on the safe side and to give only a half minim at first; although it is a good plan to begin with a small dose, there is no reason why it should not be increased rapidly. If half a minim produces no effect, give a minim at once, and go on increasing the dose until the patient complains.

THERAPEUTIC USES.

In several cases of cardiac asthma from weakness of the heart's action, in aged people where there was a want of co-ordination of the right and left sides of the heart from senile degeneration, I have found nothing to give as immediate relief as nitroglycerine, seldom having to give more than one or two doses.

Dr. John A. Upshur said that he had been sent for recently to see a woman aged 35 years, whom he found suffering from acute diarrhœa, rapidly going on to dysentery, with a neuralgic headache, insomnia, irritable stomach and great depression. The bowels were controlled by enemata. On account of the depression and irritability of the stomach the administration of such analgesic remedies as phenacetine, antipyrin, etc., were not considered advisable, so he determined to employ and observe the effects of nitroglycerine. One one-hundredth of a grain was given at 11.58 A.M. In three minutes its effects as manifested by increased tension could be positively identified. In three minutes more she expressed herself as greatly relieved and experienced a desire to sleep. By ten minutes past twelve (twelve minutes since the administration of the remedy) the patient was comfortable. She recovered without any further treatment. "Virg. Med. Monthly." Dec. 6th ult., was called to see Miss C., 17 years of age, robust and of excellent constitution, who had been suffering from a severe attack of idiopathic asthma for eighteen hours; a physician had been to see her six hours after she was taken and prescribed the usual remedies without much relief. On my arrival I prescribed one drop of the one per cent. trinitrin ; in five minutes she took a deep inspiration ; in ten minutes she was still improving, but I gave her another drop and in 30 minutes she was perfectly relieved. I left a few half drop doses in water to be taken in the event she should have symptoms of the disease returning, a part of which she took, and the treatment proved very satisfactory. In a case of intestinal hemorrhage in typhoid fever, Braymer (*Med. Age*) succeeded in saving the life of a patient, after ergot, etc., had failed, by administering nitroglycerine. An attack of intercostal neuralgia as well as an attack of anæmic headache can often be relieved by a single drop or dose.

Cates reports a case of Reynaud's disease—that is, symmetrical gangrene of the extremities—in which great relief was obtained by the injection of nitroglycerine, commencing with $\frac{1}{100}$ of a grain and gradually increasing the dose up to $\frac{1}{50}$ of a grain three times a day. The patient grew better, the sores and the pains disappeared like magic, so the routine duties of life were again made possible ("Therapeutic Gazette," 1892). In dyspnœa from cardiac disease, A. H., a farmer 44 years old, who had been suffering from chronic cardiac valvular disease for some time, came rushing into my office, said he was suffocating, and could not sit down. I gave him in water one drop of "trinitrin." In five minutes he said he felt better. I gave him another dose, and he sat down. In ten minutes his breathing was normal, and he returned home. Trinitrin is favorably spoken of in epilepsy and for injections in poisoning by illuminating gas ("Therapeutic Gazette," 1891). Dr. Eugene Scruggs, of Montserrat, Mo., speaks favorably of nitroglycerine in albuminuria.

Scarlatina.—In the prodromal stage of scarlet fever, where there is great depression, patient feeble and suffers much from vomiting and chilliness, one or two doses of nitroglycerine adds much to the comfort of the patient and facilitates the *stadium eruptionis.*

Nitroglycerine in Hectic Fever.—During the last six months a case of advanced phthisis has fallen into my hands; a lady 34 years old. And the greatest suffering she experienced when I first saw her was the rigors which for a few weeks had been almost periodical. Happening to call on her when she was having a chill, I prescribed "trinitrin"—one drop in a teaspoonful of water. In five minutes she felt better; in five more the chilliness had all vanished. She thought I was going to cure her. From that time on she has used the remedy with a marked degree of comfort.

During last summer I was called to see a lady 78 years old, residing in the country, who was suffering from chronic cardiac disease, dyspnœa and general dropsy—was completely water-logged; her feet and legs were enormously swollen and sloughing rapidly with constant oozing of serum and of unhealthy pus, and the heart's activity very feeble.

Prescribed the following:

℞ Trinitrin....................................gtt. x.
Spiritus chloroformi............................ʒ iii.
Aqua menth. piperit...............q. s. ad. ℥ iv. M. Sig.

Teaspoonful in a small quantity of sweetened water every six hours until thorough effect, increasing or decreasing the dose pro-re-nata. The above prescription had the effect of producing a notable change on the sloughing, with a slight relief in the oppressive breathing.

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ORIGINAL FRENCH TRANSLATION.

THE TREATMENT OF TABES.

By Professor Leyden.—Translated for Gaillard's Medical Journal by H. McS. Gamble, M.D., Moorfield, W. Va.

Gentlemen:—I commence the subject of treatment of tabes with Romberg; for all that was written and known about tabes before him, to speak truly, contained very little of a positive character. As you know, the pathological type of Romberg himself, although described with exactness, is not yet altogether elucidated, and embraces many things foreign to it. The most discouraging prognosis of tabes came from Romberg, and even to-day we have to contend against this pessimistic prognosis. Upon the subject of treatment, he says: Against tabes we can attempt nothing, and it would be better to let the patient alone and not torture him with the remedies which are of current usage against this disease and against similar diseases. This is especially the case in regard to issues and their known derivatives, whether from the red-hot iron or moxas upon the back to the multitude of remedies, and finally to treatment by cold water and baths.

I believe that this pessimistic opinion has done much harm to the poor subjects of tabes, and we can see even now that many of those patients who present themselves under the influence of this prognosis come in despair, and that, consequently, our first duty is to cause the star of hope to shine before their eyes.

At the present time, the therapeutic perspective is already ameliorated essentially by the fact that we are in a situation to recognize with certainty the début of tabes at a much earlier period than formerly; thanks to this, the opinion has become fixed not only among neurologists, but in the entire medical world, that many tabetics might be able to enjoy for a long series of years an entirely supportable life.

The perfecting of the balneary cures has been very useful to tabetics. Stations like Rehme, Oynhausen, Teplitz, Wildbad, Gastein and a few others have rightly acquired a great reputation because of their favorable effects.

A great advance was the introduction of electricity into therapeutics. This was long considered a specific against all nervous diseases even when organic. Recently it has been subjected to a severe and perhaps too restrictive criticism; it is unquestionably due to it that, in the therapeutics of tabes, a more favorable view has been established than that which formerly existed. At present, medical treatment, and above all derivation, have been thrust into the background.

A large number of therapeutic practices are of quite recent origin.

We have a surgical treatment for tabes introduced since the elongation of the nerves proposed by Langenbach and with this is connected the method of suspension proposed by Motschutkowski; the most recent treatment found in the journals is the injection of extract of sheepbrain. This method may appear a little strange, but when a physician in his practice makes a harmless therapeutical trial, were it only to inspire his patient with new hopes, I refrain from all criticism. On the other hand when the new remedy is announced with the sound of a trumpet in the journals by men of scientific attainments, I feel authorized to exercise a severe criticism.

I am now going to discuss the different modes of treatment, and will commence with the so-called specific which is, no more than the others, capable of causing the anatomical process to recede, even in part.

Formerly a large number of remedies were employed in the treatment of tabes. Among them, a few have acquired a particular reputation, as the nitrate of silver. For my part I have recommended the iodide of potassium, not exactly as a specific but as a means that might have some effect upon the pathological process; but I deny having advised it as a specific, and recognize the fact only that it diminishes the pains. We must mention, besides, the chloride of sodium and gold, then arsenic, ergot, and finally strychnine. Of this latter, which is recommended to be given by subcutaneous injections, especially in cases of peripheral paralysis, it must be said that in tabes it is not rational; yet it is no more harmful than useful, like the other medicaments. We believe, in fact that these medicines possess no properties of either influencing the anatomical progress in any manner or of suppressing the functional troubles dependent upon this progress.

The second mode of specific treatment of which I have to speak consists in the employment of mercury, according to the most diverse methods; this method, as you know rests upon the hypothesis admitted by some eminent neurologists that tabes is a syphilitic disease. The neurologists are divided upon this point into two groups.

I belong to these who deny absolutely its syphilitic origin. The number of those whom I willingly call my adversaries, upon this ground only and not upon that of personal relations, has increased in these latter times. I believe that the increase in the number of the partisans of the syphilitic theory is due in part to the fact that this theory is very convenient in practice. There are many physicians who willingly and with reason adopt the treatment by frictions in all nervous diseases; and as they cannot or will not try many things against tabes, they find themselves very well satisfied, because they are authorized to commence by a course of mercury. Naturally I do not mean to say that this is their reason for so acting; but, as, according to the well-known axiom, the wish is the father of the belief, we may suppose that this march of the thoughts involuntarily facilitates the idea that tabes is a syphilitic process.

The second reason is that this opinion, or if you prefer it, this theory, of syphilitic tabes has been developed by eminent men. I will mention, in Germany, in the first rank, Erb, and in France, Fournier. They have collected and published repeated statistical data; this has been repeated again recently, and I have the right and also motives for expressing my opinion upon this occasion. I have before this stated my principal objections, but they have not been taken into consideration; the same arguments having been invoked anew by my opponents, I can also reproduce my reasons. My principal objection rests upon the fact that positive proof is supported by nothing, unless by those statistics which show that out of a hundred tabetic subjects, seventy, if I am not mistaken, have been syphilitic. I am not going to criticise this evidence, but I can say that, for my part, I have, in general, extraordinarily little respect for medical statistics, and that I can never, under any circumstances, consider them as a sufficient proof. But, in the second place, the principal evidence, that is to say the specific reaction, is wanting. Mercury is a specific against syphilitic processes; I am absolutely right in believing so, and I may still call it a specific reagent against syphilitic processes; iodide of potassium is such also but to a more limited degree. It is well known that neither the one nor the other exercises any marked influence upon tabes, whether syphilis exists or not in the anamnisis. In order to increase the certitude of the syphilitic theory, some authors have even stated that antisyphilitic treatment has given very excellent results, and I have often heard this said. For my part, I have never seen any result, either among my own patients or those of others whom I have had occasion to see; they are at most illusory, transient results, and we are authorized to take into consideration also the fact that many physicians who are not specialists may be deceived in the diagnosis of tabes; I am convinced that many cases of neuritis treated and cured with mercury have been reported as evidence in favor of the cure of tabes.

I will add that the anatomical process of tabes has absolutely no resemblance to the processes with which we are familiar in the nervous system as pertaining to tertiary syphilis. The processes that syphilis engenders are sometimes gummous, sometimes interstitial and sometimes arterial. There is absolutely no analogy between these processes and the tabetic process. In order to weaken this latter objection, which, however, is very important, it has been said that syphilis renders the subject attacked by it more liable to become subsequently tabetic—an idea of which I may well say that it is of major importance. It has likewise been said that it is not the syphilis itself, but a toxine, a toxic substance engendered by the syphilis, which acts in a specific manner upon the posterior columns. This is related to the following idea, which has been applied to the systematic affections in general, and to tabes in particular: every system of fibers possesses a peculiar chemical constitution, and the posterior columns would have, in particular, a chemical constitution of such a nature that they would react in the presence of the toxine of syphilis.

This opinion is, according to my view, absolutely arbitrary and without any support from the facts; syphilis is by no means an infectious disease of which one may say that it engenders toxines; syphilis acts locally, it produces tumors, it produces ulcerations, it destroys the tissues it leaves cicatrices and adhesions, but it does not produce infectious phenomena. Sometimes there supervenes a feeble trace of fever, but, as far as anything that might be attributed to toxines or to a pretended auto-intoxication, not a trace is found in syphilis. The acute infectious diseases that may attack the cord do not engender systematic affections, but irregular pathological forms.

For my part, I consider this whole theory as absolutely untenable. Even if accepted, the mercurial treatment ought to be renounced, for, against second maladies, the antibacterial remedies no longer act. We have every reason to suppose that mercury acts upon syphilis as an antibacterial remedy, although we are not yet acquainted with its specific bacteria. But that the secondary maladies, as, for example, the paralysis consecutive to the acute diseases, ought to be treated by antibacterial remedies, is contrary to our scientific views.

However, when a colleague or a patient has desired it, I have never offered an absolute resistance to the adoption of antisyphilitic therapeutics against tabes. In this case I have always affirmed my own opinion, but I have said at the same time that other neurologists, for whom I have great respect, think otherwise. Consequently I allow it to pass, if the patient desires to try this treatment for his own satisfaction. Besides, I should consider myself authorized and obliged to do this, without abandoning, for all that, my scientific convictions.

It has been said that tabes ought to be classed with the infectious diseases. It would result from this theory that there ought to be a specific remedy against the disease, an antitoxine. At this time we are returning to the humeral theory, and chemistry will permit us again to make great advances in medicine. However, it is possible that, in tabes, there may be developed a toxine that gives rise to the alteration of the nerves, but we cannot yet formulate anything with precision, or above all base any therapeutic method upon this conception.

Besides, these views are not altogether new. Similar ones have already been expressed in various terms, and it may be interesting to see how the mode of expressing the same idea is connected with the pathological currents that dominate at each epoch. The opinion that the anatomical progress of tabes extends along the direction of the sensitive nerves, that is to say in the direction of the physiological function, was first formulated by myself. It was adopted by Vulpian and Bouchard. The latter said that tabes is propagated by following the course of the physiological function in such a way that the segments situated below are separated from the trophic center by the degenerated nervous parts. This conception corresponded to the period at which so much was said about the trophic centers and the trophic nerves.. Vulpian expressed himself differently: "They (the nerves) degenerate progressively," said he, "because a pathological agent progresses according to the direction of the function." This approached very nearly to the modern toxine. If one wished to form a more exact notion of the way in which this process becomes progressive it might be said that a nocive substance coming from the neighborhood is absorbed and is propagated in the direction of the nervous influx.

Such is the view I have taken in order to comprehend the progressive march of a process which is confined to the tracts along which the functional excitation proceeds. However, all this is simply hypothesis, and it manifests too great haste because of the desire to found upon it the hope of a specific treatment. The possibility of such a specific influence cannot be denied, but between the possibility and the reality there is often a profound abyss.

Let us add a word about the most recent prodigy of therapeutics of which the political papers are talking so much. In Paris, Constantin Paul has made extracts from the gray matter of the sheep's brain and has injected them into his neurasthenic and tabetic patients, naturally with the most wonderful results. You know that this idea is connected with, shall I say, the discovery or accidental find of Brown-Séquard, who has prepared an extract from the testicular substance and has obtained by it brilliant results against impotency. This communication has caused an extraordinary noise in France and elsewhere, but we do not know exactly whether the functional re-establishment has followed the noise to an equal degree. Many of you have seen that the matter has been pushed in France very seriously in a scientific sense. Several memoirs have been published upon this subject in the *Archives de physiologie*, according to which one may make extracts from the different animal organs, which, injected into man, are capable of exciting and increasing the functions of the same organs and glands. It appeared, then, rational to experiment with the nerve substance, in order to revivify the atrophied nerves: this is what Constantin Paul has done. I cannot forbear adding to this a little remark that recalls the famous words of Ben Akika, that everything has already existed. Many of you are acquainted with Pliny; at least I suppose so. I read the old authors sometimes with much profit, and I have found that among the Greeks and Romans, one employed against impotence the sperm of the testicles of the ass; but at that time the substance evidently had to be ingested. However, it is very interesting to know that this idea, so new and so astonishing, belonged to antiquity.

Balneotherapy, very much employed in tabes, forms part of our oldest therapeutical acquisitions. From the time of Romberg, it has been lauded by all authors. If we do not use it as a specific therapeutitical measure capable of causing the tabetic process to retrograde, we accord to it, however, a marked influence. We have for this, at present, all the more reason, from the fact that we attribute to the peripheric and neuritic processes in tabes a far more important rôle than formerly. At the present time, as thirty or forty years ago, we send our tabetic patients with the same confidence to the old approved thermal waters of Rehme, Teplitz, Wildbad, Gastein, Manheim, Kissengen, Aix-la-Chapelle; other saline and sulphurous waters also render good service. I refrain from speaking of the special conditions pertaining to the number of baths, their temperature and their duration; I will likewise dispense with discussion of the question as to when the gaseous, the saline or the sulphurous waters ought to be preferred. I hardly believe it possible that fixed laws can be established upon these points; the decision of the physician depends rather upon his subjective experience and his ability has much influence upon the final result.

Beside the thermal springs, the use of cold water has been recommended. Romberg had already pointed out the cold water cures which have remained in use to this day. Outside of the hydrotherapeutical establishments, one still employs cold sea baths, cold river baths and finally cold washings and wrappings. I have often found that the latter were very advantageous against the paroxysms of lancinating pains.

I believe that, even in the use of cold water, much depends upon ability and prudence, and that the physician is at least as important for the success of this treatment as the cold water. Water evidently does not do all.

We pass now, to one of the most important chapters of this subject, to electrotherapy. It was associated with specific therapeutics so long as it was believed that electricity was capable of exercising a favorable influence upon the anatomical course of tabes, as well as upon that of many other nervous diseases. At the present time a reversion has taken place upon this point. Nevertheless, I have no objection to repeating the fact that electrotherapy marks an epoch in the treatment of nervous diseases. That it has been extolled with an exaggerated optimism causes no essential modification of my opinion. In the days of Duchenne and R. Remak, one evidently counted with certainty upon influencing the pathological course itself by the electrical treatment; one even counted upon obtaining astonishing and rapid cures. But when the anatomical lesions of the spinal cord were more exactly understood, there was a certain difficulty in admitting that the latter could be influenced, and some contented themselves on the whole, as you are aware, with demonstrating the fact that electrical currents could penetrate the cord and even the brain, which still allowed them to admit the possibility of a direct curative action. At this time, some electrotherapeutists, notably Mobins, deny to electricity any directly curative influence whatever. This proposition appears to me too absolute, and I think that electricity can be utilized in many ways to the benefit of patients. Electrotherapy certainly can act upon the peripheral nerves, the alterations of which are to-day regarded as very common in tabes. A stimulating treatment of these sensitive nerves ought to present advantages, and, at all events, it is rationally admissible. I had already demonstrated this in my first work in 1863. Some time ago Rumpf obtained considerable success by an analogous method.

The muscles themselves, as well as the motor peripheral nerves, enter into consideration, and it will be admitted that their prudent electrical treatment is rationally indicated, even if it affords no great hopes. Finally, we cannot omit saying that the influence of electrotherapy upon the patient is altogether extraordinary; every one will confess that electrotherapy makes an impression. This entirely modern elementary force, that at this time enters so largely into our whole life, makes a profound impression upon the patient; it arouses his confidence, it revivifies his hopes, and I do not see that we are prohibited extolling these results of this therapeutic agent from a scientific point of view. I do not wish to dwell longer upon this question the ; time is wanting. I consider far more illusory another mode of treatment that has been proposed, also as a therapeutic measure in tabes ; I mean massage. For my part, I cannot admit that this mode of treatment exercises any marked influence upon any pathological process whatever. On the other hand, suggestive action has become very great, thanks to fashion. I do not think it superfluous to say that this method has, to speak truly, no intrinsic claim, and that the physicians who accept and favor it to such an extensive degree only lend a hand to a body composed of enthusiasts and non-professional persons in a manner not at all necessary.

(*To be continued.*)

SELECTIONS.

CASE IX.[1]—INJURY OF EYE-BALL—RUPTURE OF SCLERA IN CILIARY REGION—EYE SAVED.—CASE X.[1]—RUPTURE OF EYE IN CILIARY REGION—SHRINKING OF BALL, WITH SUPERVENTION OF SYMPATHETIC OPHTHALMIA YEARS AFTERWARD—REMARKS ON SYMPATHETIC OPHTHALMIA, ETC.—SELECTED CASES FROM THE CLINIC OF THE RICHMOND EYE, EAR, AND THROAT INFIRMARY.

By John Dunn, M.D., of Richmond, Va.

Case IX.—Injury to the Eye-ball—Rupture of Sclera in the Ciliary Region—Eye Saved.

Negro girl, age 23, two days before coming to the Clinic, was struck in the eye with a glass vase. Condition found to be as follows: Decrease in tension in the ball, showing that there had been considerable loss of vitreous. The ball showed a split from the center of the cornea vertically upward, extending 3 mm. into the sclera. Into the slit in the sclera, which gaped about 1 mm., was a protrusion of a part of the ciliary body; the iris had been forced at the angle into the slit of the cornea; this slit in the cornea, except just at the periphery, was linear, and along this line the cornea was cloudy, otherwise the cornea showed no sign of irritation. The anterior chamber was shallow, and the pupil contracted to a pin point. There was some congestion in the neighborhood of the slit in the sclera; otherwise the pericorneal injection was not marked. The eyeball was little sensitive to the touch, giving no such pain as is usual in cyclitis. There was no pus; no visible iritis.

If there had been caused by the blow a rupture of conjunctiva, it had healed so that the whole scleral part of the wound was covered with conjunctiva. Because of the protrusion of the ciliary body into the scleral wound, and because of the fact that negroes are extremely uncertain in regard to their attendance upon a clinic, even in the most urgent cases, and, further, because of their generally unhygienic mode of living, the question of removal of the eye presented itself. However, as no infection of the wound had taken place up to this time, and as the wound showed a great desire to heal, being already protected by the conjunctiva, it was thought best to watch it for a day or two.

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[1] The numbering of these cases refers to the order in which they are being selected for report.

Atropia was ordered, as were also cold applications. The atropia produced a complete dilation of the pupil, and most probably had some effect, by contracting the iris at its base, in pulling thus this part of the iris in a measure out of the split in the cornea. Under this treatment the irritation that was present about the ciliary staphyloma gradually subsided, and the wound in the sclera healed so perfectly as so force the prolapsed part of the ciliary body, which fortunately had been small, back into place. At the end of about three weeks every sign of inflammation had ceased, leaving as a visible reminder only an opaque linear scar, which extended through the entire thickness of the cornea from the center vertically upward ; iris adherent in upper part ; a slight scar marks the rupture of the sclera. While, of course, the scar in the cornea interferes somewhat, the vision of this eye remains fairly good—$\frac{20}{40}$. No trouble could be made out in the fundus when the pupil had been sufficiently dilated to allow examination of it. The lens remained perfectly transparent.

It is not improbable in this case that the preservation of the eye was due to the rupture implicating but slightly the conjunctiva, there being no evidence of its rupture or of subconjunctival hemorrhage two days after the injury. Had there been an extensive rupture of the conjunctiva, or had the rupture of the sclera been more extensive, a suture might have been passed through them so as to approximate the two lips of the wound.

Unfortunately, few cases of rupture of the sclera in the ciliary region terminate so happily—the involvement of the parts concerned being generally greater, and the introduction of the microbe element often complicates matters still further. The case, however, shows that traumatic rupture of the sclera in the ciliary region is not necessarily fatal to the preservation of the eye.

Will there be eventually a shrinking of the ball? Probably not, although such a thing is possible.

Case X.—Rupture of the Eye in the Ciliary Region—Shrinking of the Ball, with Supervention of Sympathetic Ophthalmia Two and a Half Years after the Injury.

Jas. B., negro, aged 64, was injured in the ciliary region, O. D., with a large needle, such as is used in sewing carpets. The wound was followed by escape of vitreous, irido-cyclitis, atrophy of the ball. After the inflammation subsided the negro felt no more pain in the eye up to the time of his presentation at the Clinic—more than two and a half years later. In December, 1891, the sight of O. S., which had been perfect up to this time, began to fail. On February 3d he came to the Clinic. No pain on pressure in O. D., which was atrophied to one-third its normal size. This ball shows a large triangular scar through the ciliary region in the inner half of eye. The negro says he has never been conscious of pain in this blind eye since the injury. [This statement is to be received *cum grano salis*, both on account of the nature of a negro's memory in regard to physical discomfort, and because of his at times wonderful endurance of lesions which in the whites would cause greatest agony.] There is no pain on pressure, no sense of pain or discomfort in O. S., the tension of which is probably + 2 T; the cornea is so hazy as to shut out every trace of red reflex, and this although the pupil is dilated three-fourths maximum and is immovable under light stimulus; the corneal haziness is densest through the lower half of the cornea, view of fundus impossible; there is no marked pericorneal injection; no photophobia; vision is practically reduced to the ability to distinguish light from darkness, and the perception of the outlines of objects between the eye and the source of light. The patient was led to the Clinic by his wife. All the history obtainable is that since some time in December his eyesight has failed him and he has never seen since.

After watching the case for two or three days I removed the atrophied stump. The eye was removed under cocaine, the patient during the operation sitting upright in a chair, and leaving for home immediately afterward.

One point was to be commented upon. The operation was almost bloodless—section of the conjunctiva being entirely so. It is not improbable that in the causes which prevented the determination of an excess of blood to the orbit is to be sought partially the explanation of the absence of pain in the stump and in the eye with the "serous iritis."

Following the removal of O. D., the cornea of O. S. cleared slowly from above downward, until a dim red reflex could be seen—no view of the fundus, however; the pupil gradually diminished in size, and when the cornea was cleared enough to see the pupillary margin, it was found to be surrounded by a slight deposit. The tension remained high. A drop of eserine readily reduced the pupil to a pin point size, but seemed to have the effect of increasing the amount of deposit along its free edge. Mercurial inunctions, hot applications and atropine changed this condition of affairs very little. The corneal haze varied in density from day to day, showing that the process at work in the eye had been only temporarily, or, at most, only partially relieved by the removal of the stump O. D. The tension of O. S. remained high. No pain at any time. Vision varied as the density of the corneal haze, but remained much better than it had been before the enucleation.

Finally, after six weeks' treatment, having failed to ameliorate matters, iridectomy was done in O. S. This operation produced but little reaction, although it considerably increased the amount of the deposit on the lens surface. Reduced tension to normal temporarily. The deposit on the lens surface increased slowly from day to day, so that April 12th, 1892, it was considerable in amount. No fundus visible. Cornea more hazy than ever. No pericorneal injection. Slight increase of tension. No pain on pressure upon the ball, although patient says he has sometimes pain in the ball at night. Hot applications, mercurial ointment, atropine have no effect. The process affecting the eye when first seen continues its way slowly, but surely.

April 23d.—Patient has suffered severe pain in eye for past three days. Hot applications increase the pain. To-day tension is decidedly +, but not painful on pressure when I saw him at 2 P. M., although he said it had been painful to the touch in the morning. Decided pericorneal injection, which extends a considerable distance from the cornea. Increase of deposit in the cornea, and in the anterior chamber on the lens, over condition on the 12th of April. Atropine partially dilated the pupil, which was then kept fixed by the deposit.

May 2d.—Negro has suffered severe pain in and about the eye for the past week. Cyclitis. Some clearing of the cornea. Slight deposit over the whole pupillary area. No cloudiness of the aqueous. Treatment apparently without avail.

May 25th.—Cyclitis has not yet subsided; has been so severe as to produce thinning of the sclero-corneal junction. All treatment useless.

Like all cases of sympathetic eye trouble, this case suggests the question as to the *mode of origin of the disease in the sympathizing eye.*

Up to a certain point, the most satisfactory of the hypotheses upon this subject is the one that regards sympathetic ophthalmia as the expression of a vaso-motor neurosis. Unfortunately, when this point is reached, the key of analogy is wanting, and the door to the secset remains locked.

In the first place, we have the conditions necessary for the production of a neurosis. "The origin of a neurosis implies the existence of a pathologically conditioned region in which the exciting waves arise whose reflex response is the expression of the neurosis in question" (Woakes).

In the second place, sympathetic ophthalmia does not follow immediately upon the receipt of the injury to the other eye. Its appearance varies, when it does appear, from a few weeks to an indefinite number of years.

Again, sympathetic ophthalmia develops apparently more easily in children than in older people; and it would appear that childhood is the age in which the violence of neurosis is relatively greatest.

And, again, neuroses select for their expression preferably those regions whose nerve supplies proceed from centers closely correlated with those to which the exciting waves from the pathologically conditioned area spread.

Through their nerve supply the two nerves are connected physiologically and anatomically, and there are no two areas of the body more adapted by nature for the expression of neuroses in one area dependent upon pathological changes in the other area than are the two eyes. In health, their accommodation, their movements, their perception of objects, their response to the stimulus of light, are all virtually one. The optic nerve from each eye meets the nerve from the other, and by giving and taking alike makes fast the band of union between the eyes. The lymph channels of the optic nerves make closer still the connection of the two eyes. Sharing thus alike in health, imagination, were the facts out of the question, could draw the picture of the sympathy of one in disease with the other. So sensitive is the eye to reflex demands that it responds to them, not alone when these demands come from its fellow eye, but often when they are made from other regions.

As examples of sympathy expressed by the eye with pathological conditions not in the other eye may be mentioned the following: Œdema of the lid or lids from nasal polypus, or from hypertrophic conditions of the turbinates; pain in the eye-ball from nasal stenosis; paresis of the ciliary muscle from turbinate hypertrophy; Lennox Browne's oft-quoted case of glaucoma from nasal polyp (a case *en passant*, which, if more had been observed like it, would help far on toward the solution of the question of the nature of sympathetic ophthalmia). For my part I am inclined to think other causes than the nasal polyp had the major share in the production of the glaucomatous condition, however much the neurosis originating from the polypus may have had to do with preventing a cure so long as it remained in the nose.

Direct injury or irritation of the larger branches of the trigeminus may give rise to even more marked sympathetic trouble. Thus, injury of the supra-orbital had been known to produce a hyperæmic condition of the conjunctiva, lachrymation, contraction of the pupil, diminution of the visual acuity, contraction of the field of vision, cloud before the eyes, sensitiveness to light; and this not alone on the side upon which the injury to the branch of the trigeminus existed, but in both eyes. In one case I have seen diplopia result, as I believed, from irritation of the supra-dental nerve.

Mauthner (*loc. cit.*) says: "Just in the same way as the obscurations of the field of vision, as well as the diminution of central vision with concentric limitation of the field of vision, do not depend upon diminished but on increased irritability of the retina, so the sensitiveness to light, rapid weariness of the eye at work, photophobia, flashes of light and sparks before the eyes, are manifestations of irritation propagated from one optic nerve to another." Not necessarily from one optic nerve to another—due to intra-ocular irritation—since, as said above, all of the symptoms, with the exception of "flashes of light and sparks before the eyes," may result reflexly from injury to the supra-orbital nerve. (*Vid.* "Case of Injury to Supra-Orbital Nerve," *N. Y. Med. Jour.*, May 30, 1891.) In this case of injury to the supra-orbital nerve all the symptoms of sympathetic irritation were present, although in a degree less severe than is sometimes the case in sympathetic irritation due to injury of the first eye.

While considering the extent to which reflex excitement may reach, whether it stops at irritation or may proceed to inflammation, the following case is instructive: Mr. A., chronic eczema of the face, chronic ulcer of the cornea. The skin supplied by the trigeminus is then diseased. Now, after the skin is apparently healthy, but before the nerve supply regains its normal tone, we can precipitate a fresh attack of eczema by irritation of corneal ulcer, as I have done with bichloride of mercury, with the actual cautery and with hydrogen peroxide. The resultant reflex is not merely erythema of the skin of the cheek and lids, but erythema, swelling of the lids *with elevated temperature of the part*, œdema of the skin, eczema of the cheek, which extended down to the collar-bone, *and the eczema of the weeping kind.* This case is interesting as showing *how reflex influences, which have to exhibit themselves in areas already diseased, may induce actual inflammation.* In this case it is true that the patient had had eczema of the face, and at the time these results were obtained there were excellent reasons for knowing that the eczema had not entirely disappeared; and, further, for believing that the eczema was the result of nerve irritation—perhaps of sensory nerve neuritis. But, although all this be true, the reappearance of the eczema in an acute form every time that the corneal ulcer was irritated, and the fact that the severity of the eczematous outbreak was severe in proportion to the severity of the irritation applied to the cornea, proves that the fresh outbursts of eczema were reflex upon irritation of the cornea.

As further examples of reflexes, the result of irritation of the cornea, I may mention the nasal hydrorrhœa that often accompanies phlyctenes of the cornea in children, the hydrorrhœa showing itself in the side of the nose corresponding to the eye in which the phylctene is present. It is more than probable that the phlyctene in phlyctenular ophthalmia is the result of infection from the decomposing nasal secretions, as almost without exception in children suffering from this disease there will be found diseased adenoids of the naso-pharynx. The clear, watery secretion that often pours from the nose, on one side if the phlyctene affects only one eye, on both sides if both, is the result not unlikely of reflex paresis of the blood-vessels supplying the nasal mucous membrane, although it may be the result, less likely, of the hypersecretion of tears which pass into the nose. Or, again, in a case of infected ulcer of the cornea, due to infection of the corneal wound following the operation for pterygium, I have seen disseminated acnoid spots appear in the skin of the cheek beneath the eye affected.

In looking for an explanation of the mechanism of reflex actions that result in irritation, and of the roads by which the nerve influences travel from the pathologically conditioned area to the area exhibiting the reflex irritation, we naturally seek the route followed by the sensory nerve supplying the area of origin of the reflex to either its nearest ganglion center, or to its center in the brain or medulla or cord; in this center, whichever one it be, there is, as it were, a turn-table, by which the sensory impulse leaves the center along another route; and, we generally say, in these cases it chooses the route of the sympathetic nerves, and so reaches its destination, the reflexly irritated area.

While this is seemingly the route taken by reflexes that exhibit themselves as irritation, multitudes of unanswerable questions suggest themselves. One of the more prominent of these questions is: Why does not irritation of the same area always produce the same reflex? For example, sympathetic eye troubles show themselves as: Sympathetic irritation, including photophobia, photopsia, functional disturbances of the retina; sympathetic keratitis (Warlomont), sympathetic intermittent keratitis (Rossander), sympathetic kerato-iritis (Vignaux *et al.*), sympathetic sclerotitis (Rossander), iritis serosa sympathetica, iritis plastica sympathetica, irido-cyclitis sympathetica, retinitis sympathetica (Galezowski), sympathetic poliosis (Schehl). (Above cases are quoted from Mauthner's *Sympathetic Diseases of the Eye*). Some of the above cited cases are, doubtless, not true cases of pure sympathetic inflammation, there having existed, I think probable, certain added conditions which predisposed the affected parts to develop, sympathetically, inflammatory state. From apparently the same nasal area in different persons the reflex neuroses present a far more varied picture.

The very fact that sympathetic eye troubles can assume different forms is an argument in favor of their reflex, and not direct origin. In the case of sympathetic irritation, it would seem, from the analogies furnished by experiment, that the hyperæmic condition of the conjunctiva is the result of paresis of the sympathetic—*i. e.*, the vaso-motor fibers to the conjunctival blood-vessels—similar hyperæmic results being obtainable in the ear of a rabbit by section of the cervical sympathetic.

Overfilling of the vessels of the iris is followed by contraction of the pupil, a condition of affairs we have in the case above referred to of injury to the supra-orbital nerve; and it would be no awkward stretch of the imagination to find in concentric contraction of the field of vision, photophobia and diminution of visual acuity, the expression of a vaso-motor paresis of the vessels of the retina.

"The naso-ciliary nerve enters the orbit through the sphenoidal fissure, as the third branch of the ophthalmic (sensitive) division of the trigeminus. As it crosses the optic nerve, the naso-ciliaris, having previously given off the long sensory root (radix longa) to the ciliary ganglion, sends off from one to three filaments, called the long ciliary veins, which run straight forward to the eye-ball. The ciliary ganglion, situated between the optic nerve and the external rectus muscle, receives motor fibers (radix brevis) from the third cranial nerve and sympathetic fibers (radix sympathetica) from the cavernous plexus, which surrounds the internal carotid artery. The three roots just mentioned enter the posterior border of the ganglion, while the anterior border gives off the short ciliary nerves, which then pass forward to enter the eye. The long and short ciliary nerves split up into fifteen to twenty filaments before piercing the sclerotic around the periphery of the optic nerve, and dividing still further as they advance, run forward, between the choroid and sclera, to the ciliary muscle in which they form a fine network, from which numerous fibers are distributed to the iris and cornea. The ciliary nerves, by reason of their triple composition, confer *sensibility* upon the individual parts of the eye, as well as *motility* upon the ciliary muscle, the muscles of the iris and those of the parietes of the vessels" (filaments vaso-motor from radix sympathetica). Thus it happens that injury to the eye sends its sensory impulses first to the ciliary ganglion; here is transformed a part of these impulses into vaso-motor impulses, which go directly to the seat of injury, to resist as far as possible the results of the injury, or to furnish material for the restoration of the functions of the part, and results in vaso-motor constriction of the injury by only slight irritant, or in vaso-motor dilatation (result of paresis) when the injury is more violent; and it seems highly probable that from the ganglionic center vaso-motor impulses pass not only to the seat of injury, but in a certain measure to the whole area supplied by the vaso-motor efferent fibers from this ganglion. The remainder of the sensory impulses pass out to the higher ganglion (of Gasser), or to the brain centers, to the medulla, where a further transformation of sensory into vaso-motor impulses takes place. And I have no doubt, in the case of a child who loses an eye through failure to remove the injured eye, that the complex of vaso-motor reflexes exhibiting themselves are at once most varied and interesting. One may not allow a child to lose an eye, however, that one may study exhibitions of reflex actions; and our observations of these reflexes are thus necessarily limited and more or less disconnected.

The further question arises as to whether there must necessarily be pathological changes in the ciliary nerves as a *sine qua non* of sympathetic ophthalmia; and if so, whether these changes are the result of direct spread of the inflammation along the nerves from the diseased area, or whether they result from severity of the "nerve-storms" that pass along them. Alt has searched for alterations in the ciliary nerves as the sesame to the understanding of the nature of sympathetic ophthalmia; but as a reward for his labors, he discovered no constant lesion, and, in the majority of the cases, no lesion at all, or none that might serve as an anchorage for hypothesis.

Again, after enucleation of the injured eye, when the enucleation has been performed at the right time, the rapid and complete disappearance of the symptoms of irritation proves that the irritation symptoms were due to perversion of function rather than to organic change.

Unforunately, the failure of enucleation to remove the symptoms attendant upon irido-cyclitis, iritis plastica, or even iritis serosa in many cases, does not seemingly lend its evidence in the same direction. The removal of the atrophied ball in this case is followed by marked temporary improvement in the condition of the sympathizing eye. This improvement, however, is only temporary, as, after a few weeks, the iritis serosa becomes an irido-cyclitis, and the eye is lost.

The history of this case would seem to bear out Mauthner's credo in regard to treatment in presence of an iritis serosa sympathetica, that "enucleation is contra-indicated; and the enucleation under these circumstances, of an eye which is not totally blind, is absolutely unjustifiable." In this case the eye enucleated had not only been blind for more than two year, but was atrophied, and somewhat painful. Mauthner's teaching on this point is, however, not everywhere accepted; Marchal has collected ninety cases where enucleation was done in the presence of one of the so-called "benign" forms of sympathetic inflammation. Among these ninety cases there were only eleven where enucleation was followed by failure to relieve the condition in the sympathizing eye; and one has, perhaps, fair reasons for doubting whether there would have been seventy-nine eyes saved had the treatment been other than enucleation.

How are we to interpret this sequence of events—improvement in the sympathizing eye immediately after enucleation of the second eye, this improvement followed by an inflammation which ends in the destruction of the eye? In the first place there is distinct improvement in the condition of the eye with the sympathetic iritis serosa for the days immediately following the removal of the atrophied stump. Such an improvement has been noted often enough and Mauthner lays especial stress upon this point. The temporary improvement is certainly dependent upon the enucleation. What has the enucleation left in the place of a persistent source of "nerve-storms?" It has left a wounded area, the result of section of the optic nerve, ciliary nerves, blood vessels, tendons, and of all the tissues holding the eye in the socket; and it is during the time requisite for the healing of this wounded area and the establishment of fixed relation among the contents of the orbit in its changed condition that the temporary improvement is seen in the sympathizing eye. As soon as these fixed relations become established, the sympathetic trouble of the second eye appeared in an aggravated form.

It remains a question whether any treatment could have saved the second eye, although enucleation may have hastened a state of affairs which was certain to appear, or "may have been unable to cut short the irido-cyclitis which was already under way." (Hirschberg.)

Why was not the marked improvement in the second eye, following the enucleation, permanent? Seemingly, the removal of the source of the trouble should remove the effects. The fact that in a certain proportion of these cases of so-called "benign" sympathetic affections there is no return to the normal after the enucleation of the primarily affected eye, seems to mean that changes have been brought about, in the sympathizing eye, which are no longer dependent for their continuance or aggravation upon the presence of the primarily injured eye. This is certainly the case in the so-called malignant forms of sympathetic ophthalmia. It must have been such a case as the one here reported, where, following enucleation, there appeared in the second eye temporary improvement that led the supporters of the reflex-neurotic origin of sympathetic ophthalmia to search for changes in the ciliary nerves to support their hypothesis.

Continued "*excessive* stimulation ultimately exhausts the nerve and causes at the same time the phenomena of paralysis of the vascular wall;" and "continued excessive energy," reflex from the nerve waves originating in the ciliary region of the injured eye, is exactly what we have in the ciliary nerves of the secondarily affected eye. Nor does it seem unlikely that in the changes, the result of vaso-motor paralysis in the ciliary body, is to be sought the beginning of the story whose succeeding chapters are sympathetic irritation, "benign" inflammation, "malignant" inflammation.

The unanswerable question is, where do the "benign" forms end, and where the "malignant" begin? What factor added to the "benign" makes it "malignant?" Of ninety cases where the "benign" inflammation exists in the second eye, enucleation of the primarily affected eye is, in seventy-nine cases, followed, according to Marchal, by disappearance of the "benign" inflammatory symptoms; while in the remaining eleven the inflammation in the second eye assumes one of the "malignant" forms, and the eye is destroyed. While the negro, the subject of these remarks, was under treatment, the following case, which illustrates well the uncertainty of the sequence of events consequent upon injury to the ciliary region, came under my care:

Mr. G., 45, was struck four years before in the right eye by a piece of steel. Severe inflammation of the eye followed the injury, as well as irritation of the second eye. For some reason, the injured eye, although blind as the result of the inflammation, and although it was the cause of irritation in the second eye, was not removed. During the following four years there was history of repeated inflammations in the injured eye, with more or less severe symptoms of sympathy in the fellow eye.

The condition of the right eye, when I saw him, was as follows: scar, with slight contraction of ball in immediate neighborhood, in the ciliary region of the nasal side of the eye; obliteration of pupil by a membrane; eye extremely sensitive to touch; ball inflamed; severe periorbital neuralgia, as well as great pain in the eye; second eye sensitive to light, but giving no other evidences of irritation. The injured eye was removed, and just behind the scar, in the ciliary region, was found a bit of rusty steel about the size of a grain of rice. The lens was found to be cataractous, and there were various evidences of partial disorganization of ball.

Following the removal of the right eye there were slight evidences of irritation in the left eye for a day or two, but these soon disappeared, and Mr. G. had no further trouble with this eye.

Here, seemingly, all the conditions were favorable for the development of sympathetic ophthalmia, and yet for four years had not been able to cause it. It is my belief that it would, however, sooner or later, have appeared.

In this connection, we must consider for a moment the "iritis serosa" as exhibited in this case. In the first place, although it had existed six weeks or more, it had, according to the negro, never caused the eye to pain; and the eye, when the negro came to the Clinic, was not in any way painful to the touch, nor was it sensitive to light, nor were there evidences of marked peri-corneal injection, nor was there any hypersecretion of tears. The tension of the ball was +. The cornea was in part hazy, from the deposit in the posterior layers, and there was evidently a slight deposit on the lens along the pupillary margin. No hypopyon; no visible disturbance of the aqueous. Iris was partly dilated.

This condition here described is, in general, the usual one found in "iritis serosa sympathetica." Could this picture be produced as the result of continued vaso-motor disturbance, paresis of the small vessels in the ciliary body, *bringing about nutritive changes in the parts washed by the current from the " aqueous gland" through changes in the composition of the aqueous secretion?* It would seem that this might be probable, and I am inclined to think that due prominence has not been given to the part the " aqueous gland " plays in the production of sympathetic trouble in the second eye; nor is it unlikely that the key to the fuller understanding of the nature of sympathetic eye troubles will be found in the consideration of the facts that there is an " aqueous gland"; that, as a gland, it secretes a fluid whose composition must be within certain limits, and whose amount must be proportionate to the capacity of the excretory channels, that we may have a healthy eye; that both the nature and amount of the secretion from this aqueous gland are regulated by definite sets of nerves; that these nerves respond to reflex influences; that there is such a thing as reflex vaso-motor paresis, which, it is not unlikely, under certain circumstances may become vaso-motor paralysis; that, in all physiological ways, the brain centers for the two eyes are intimately connected, and that hence the second eye is the fit region for the nerve waves arising in the first eye to express themselves reflexly; that *vaso-motor disturbance can give rise to changes in the nature and amount of the secretion of the aqueous gland;* that if this vaso-motor disturbance be severe enough, or sufficiently prolonged, vaso-motor paresis or paralysis will ensue, and that this will be the cause of such changes in the composition of the aqueous humor as will result in nutritive disturbances of the endothelial lining of the anterior chamber; and that it is here we are to seek the meaning of sympathetic "benign" inflammation and thence to find the cause of the " malignant." (There are several interesting questions involved in the manner of production of these changes in the composition of the aqueous.)

According to Jesner and Grünhagen, stimulation of the vaso-dilator fibers of the trigeminus is followed by increased flow of blood to the eye, " with consecutive excretion of the fibrin factors and increase in the amount of albumin of the aqueous humor." Nicati says there are "deux sortes d'humeur aqueuse: L'humeur aqueuse normale, qui existe habituellement dans la chambre anterieure et qui n'est pas coagulable; l'humeur aqueuse, qui se reproduit aussitôt après une punction ou une opération et qui contient une si grande quantité de fibrine qu'elle se prend en masse, spontanément, comme de sérum sanguin." Nuel and Cornil, writing "of the endothelium of the anterior chamber, especially that of the cornea," say "le contact de l'eau pure est mortel pour l'endothélium, seule, la solution physiologique de chlorure de sodium est inoffensive. Il suffit cependant de descendre á la dilution de 4 pour cent. pour voir reparaître les effets délétères de l'eau. Les solutions de sels mercuriaux, employés souvent dans le but de disinfecter la chambre antérieure frappent de mort toute la couche endothéliale de la cornée, même à une dilution qui n'est plus microbicide."

These quotations bear out the facts that the composition of the aqueous humour varies and is under nerve regulation; and that the endothelial lining of the anterior chamber requires as the *sine qua non* of continuing in a healthy condition that the composition of the aqueous be within certain limits, and the further fact that solutions, which on other grosser parts of the body produce by contact no demonstrable lesion, can, when applied to the endothelium of the anterior chamber, cause deleterious results. In other words, it seems to me there are good *reasons for considering the condition "iritis serosa sympathetica" to be the result of changes in the composition of the aqueous, which changes, in turn, were the result of continued excessive reflex nerve-storms which expended their force on the "aqueous gland."*

Further questions involved in support of this point and in regard to the additional factor in the production of "malignant" forms of sympathetic ophthalmia, whose origin is substantially the same as that of the "benign" forms, will be considered later in connection with another case of sympathetic ophthalmia.

THE OPERATIVE TREATMENT OF GOITRE.[1]

By J. Collins Warren, M.D., Associate Professor of Surgery, Harvard University; Surgeon to the Massachusetts General Hospital.

Tumors of the thyroid gland are not common in this country, and consequently the experience of American surgeons is small as compared with that of many on the continent of Europe, where within the last decade the operative treatment has received a considerable impetus.

[1] Read before the Boston Society for Medical Improvement, February 8, 1892.

The dangers of goitre appear to be due principally to dislocation and compression of the trachea and consequent interference with the respiration. There is also a certain amount of venous congestion in the cervical region, with consequent dilatation of the right heart, which may be followed by degenerative changes in the tissue of that organ. There may also exist some bronchiectasis and emphysema.

Pressure upon the trachea causes, in advanced cases of the disease, displacement and flattening of the tracheal canal, so that it presents an appearance known as the scabbard-like distortion. There is also, according to Rose, a softening of the tracheal rings, due to pressure, giving rise to a condition which favors the formation of a kink in the canal, following quick movements of the head, while the body is motionless. Sudden death may result under these circumstances. The disorders of respiration seen in animals after removal of the thyroid gland are regarded by Horsley as due to changes in the functional ability and activity of the respitatory center, due to changes brought about in the nutrition of the tissues by the cessation of function of the gland.

The difficulties and dangers of thyroidectomy have usually been considered as objections to the operation. On this account many modes of treatment have been devised. It is not my purpose to give you this evening a complete summary of the various forms of treatment of goitre. I will, therefore, briefly refer only to one or two methods in which I have had some experience.

For clinical purposes the enlargement of the thyroid gland may be divided into three varieties—the vascular, the parenchymatous and the cystic. A favorite method of treating the vascular goitre is by electrolysis, and many of you are familiar with the monograph by Dr. Robert Amory. His results show that the operation is well suited to this variety, and if complete cure cannot be effected in all cases, considerable diminution in the size of the gland may be procured. Good results can also doubtless be attained in some of the parenchymatous types of the disease by this method.

The internal use of iodine may be of some use, in young persons, in diffuse forms of goitre; but, according to Bruns, if no change occurs in the size of the tumor very soon after the use of the drug, improvement is not to be looked for.

Parenchymatous injections of iodine have been employed, particularly in the cystic variety. A number of cases of sudden deaths are, however, reported as following the use of this remedy, although many favorable results have been obtained.

Death may be caused by embolism, and also by paralysis of the abductor muscles through reflex irritation, following an absorption of the iodine into the pneumogastric nerve or the recurrent laryngeal.

Wörner reports 75% of successful cases by this method, and in one case a single cyst, the size of a man's head, was cured in this way. It appears to be best adapted to single, thin-walled cysts. The possibility of suppuration following this mode of treatment should be considered, as well as the occurrence of hæmorrhage from the interior of such cysts when once they have been opened.

The operation of thyroidectomy appears to be indicated in cases when the difficulty in breathing has become a prominent symptom, or when the tumor shows a tendency to grow rapidly and there is also some disturbance in the respiration. For cosmetic purposes solely, the operation should not be performed except, perhaps, for a small nodule which can easily be enucleated.

The mortality of the operation has dropped, according to Bruns, from 41% in 1850 to 5.8% in 1884. Kocher reports 250 operations, with only six deaths.

The incisions recommended by different operators are either Y or V-shaped, in the case of the removal of both lateral lobes, or along the border of the sterno-mastoid if one lobe only is to be removed.

Several large subcutaneous veins are usually found running vertically over the front of the tumor. Their lumen is very capacious, and they retract quickly beneath the margins of the incision, and, unless promptly secured with forceps, are liable at any moment to give rise to troublesome bleeding. In order to reach the surface of the tumor, the edge of the sterno-mastoid must be sought for, and that muscle, which is thin and flattened, must be drawn aside. In two of my cases it was necessary to divide the sterno-thyroid and sterno-hyoid muscles, but the omo-hyoid, which frequently has to be divided in these operations, was not seen. On reaching the tumor, it is important to divide all layers of connective tissue until the capsule is reached. It is also important to avoid cutting into the tumor itself, owing to the difficulty in controlling the hæmorrhage which ensues. Starting now from the median line, the lobe should be slowly and cautiously separated from the surrounding tissues by the finger or some blunt instrument, and an effort made to reach its upper and outer border, beneath the margin of which the superior thyroid artery will be found. This should be clamped, as also a number of smaller vessels which have been divided in the mean time. The tumor is then drawn inward and downward until the inferior thyroid is reached, which must also be clamped and divided. Great care must be taken at this point to avoid clamping or cutting the recurrent laryngeal nerve, which lies close to and behind this vessel. The nerve is always hard to find, and in no case have I seen it. By keeping close to the surface of the tumor, and avoiding wandering between outlying layers of connective tissue, this mishap can be avoided probably in the great majority of cases. Large masses of tissue should not be hastily caught up with the forceps during this period of the operation. If the artery can be found and isolated, it would be well to pass a ligature around it with an aneurism needle. On approaching the trachea the knife has to be used more freely, as the tumor is usually quite adherent to its anterior surface.

In very large and adherent growths the operator may content himself with dividing the isthmus, as the tumor may subsequently undergo atrophy after this operation. Pressure on the trachea will be relieved also in this way.

Whatever the method employed be, the bleeding is usually very free, and the operation more or less prolonged. Rose reports a case where 200 ligatures were applied, and the operation lasted several hours. The larger types of goitre, so familiar to the Swiss tourist, are fortunately rarely seen in this country. I am in the habit of using a small drainage tube to avoid pressure on the trachea during the primary serous oozing.

The most important feature of the operation remains to be mentioned; that is, the necessity of leaving behind a portion of the thyroid gland, as myxœdema is almost certain to develop if all the gland-tissue has been removed. It is true that quite a number of cases of "total extirpation" have been found without the occurrence of this unfortunate sequel, but it is probable either that a portion of gland-tissue has unwittingly been left behind, or that accessory glands existed. The presence of such glands is stated by one writer to be demonstrated in about one-half the cases examined. They lie in different places—near the arch of the aorta, at the side of the trachea, or between it and the œsophagus, or near the hyoid bone.

There are various theories still put forward as to the functions of this gland. By some it is supposed to be a blood-gland connected in some way with the development of the blood-corpuscle. It is also supposed to remove certain deleterious substances from the blood, or to prepare for the nerves certain substances which are necessary for their proper nutrition. It is also supposed to be a regulator of the circulation of the brain. It is probable, as shown from experiments on cats and dogs, all of which died after removal of these glands, that the organ plays an important part in the nutrition of the nervous system. Before this peculiar result of the removal of the gland was understood a large number of cases of total extirpation were performed. Kocher found a development of myxœdema, or cachexia strumipriva, as it was originally called, in all but two of eighteen cases; as a recurrence of the growth took place in both of these cases it is probable that a portion of the gland was left behind in both instances. Reverdin in eleven cases of total removal had but five cases of cachexia.

In those cases where only a small fragment is left behind the symptoms of myxœdema may develop to a certain extent and subsequently disappear after the fragment enlarges, as is usually the case. They may grow to considerable size, as the following case by Bircher shows:

A servant girl, twenty-seven years old, underwent the operation of total extirpation for a goitre accompanied with difficulty of breathing. The operation was followed by paralysis of both recurrent laryngeal nerves, the resulting hoarseness disappearing seven weeks later. Four weeks after the operation she became languid and sleepy, so as to be unfit for housework. Her mental condition deteriorated; her expression changed; and her complexion became pale and the skin wrinkled. This condition continued for two months, and gradually improved; and at the end of six months had entirely disappeared. In front of the larynx there was now to be seen a fragment of the thyroid gland, which had grown to the size of a filbert. It had evidently been left behind by accident.

Another case described by this author is of peculiar interest, as the symptoms of myxœdema were temporarily relieved by the grafting of a fragment into the peritoneal cavity and apparently permanently removed by a second operation of the same kind.

A peasant woman, thirty-three years old, slightly affected by cretinism, was operated upon for partial removal of the thyroid gland. A small lobe, which it was intended to leave behind, came out accidentally with the rest of the tumor. The wound healed by first intention. Two months later she returned, and reported attacks of severe cramps. She was easily tired, and was always sleepy. Her appearance had changed entirely. Her face had become swollen under the eyes and about the cheeks and lips. Her gait was staggering. Her intellect was much deteriorated.

Soon after entering the hospital she had an epileptic seizure. Six months later the marasmus had become so pronounced that she could not leave the bed. It was decided to try implantation of thyroid tissue into the abdominal cavity. Laparotomy was performed simultaneously with thyroidectomy in a case of partially cystic goitre. Two fragments, about the size of filberts, were introduced through a small incision into the peritoneal cavity. A few days later improvement began to show itself, and in twelve days the patient was able to leave her bed and to walk about the ward. Her intelligence improved somewhat. At the end of two months, however, a relapse occurred; and the operation of implantation was repeated, about five times the amount of gland-tissue being introduced into the abdomen on this occasion. The myxœdema swelling soon began to disappear; and in the course of two months the patient was able to do a good day's work as kitchen maid. Six months after the second implantation the patient was still in good health.

The non-operative or atrophic myxœdema is a rare disease and occurs sporadically, not being indigenous to any particular quarter of the globe. It is found more frequently in women than in men or children. It is supposed to have some connection with disturbed genital function, as it occurs frequently at the menopause. The disease develops slowly. The first symptoms are observed in the skin, which becomes rough and dry. The hair, sometimes the teeth, drop out, and the nails become brittle. The skin next becomes œdematous, but there is not, as in ordinary œdema, pitting on pressure. The face swells first, and loses its expression; later the head, abdomen and extremities are affected; genuine œdema may occur in the later stages of the disease when the internal organs have undergone extensive changes. The changes seen in the nervous system are mqre or less well marked. The reflexes are diminished; there is slowing of all movements and the gait is a rambling one. The power of co-ordination is somewhat disturbed. The intellect is at first intact, but later there are delusions, and sometimes delirium. The circulation is feeble; hemorrhages are often seen in the skin and mucous membranes, and the catamenia are irregular. The course of the disease is slow, the duration varying from six to twenty years. Death occurs from exhaustion and visceral complications. The pathological changes consist in gelatinous hypertrophy of the connective tissue, particularly of the skin and subcutaneous adipose tissue, with enlargement of the lymphatic vessels. There is also a thickening of the walls of the arteries. The thyroid gland tissue atrophies and gradually disappears and the interstitial fibrous tissue becomes greatly increased in amount.

The operative myxœdema or the cachexia strumipriva has become familiar since the general adoption of the total extirpation of the thyroid—an operation which has in consequence been abandoned. This type runs its course more rapidly. The cerebral irritation is more marked in consequence, and we find vertigo, tetanic spasm and epilepsy in many cases. It may terminate fatally. It is interesting to note in this connection that after thyroidectomy in dogs, the pituitary gland is swollen and the cells became vacuolated and ultimately disintegrated the longer the animal survives the operation. In sporadic cretinism when the thyroid gland is lost, the pituitary body has been found to be enlarged.[1] In this form, however recovery may occasionally result either by the devel-

[1] Horsley.

opment of accessory lobes or fragments of gland tissue left behind, or by the implantation of portions of the gland. Those fragments left behind may grow to the size of a walnut, and it is only by the development of these fragments that the patient escapes the disease.

It is proved by experiment that dogs and cats cannot live without the thyroid gland—the animals become inert, sleepy and slow in movement. The sensibility is diminished and muscular twitchings are frequent. Death occurs in four to twenty-seven days. At least one-third, or in some cases one-fourth, of the gland must be left to prevent the onset of the fatal cachexia. Shiff found that if a piece of gland was implanted into an animal the thyroid gland could be removed without injury. When animals thus treated were killed a few months later fragments of the original gland implanted were found still remaining. If the implanted gland becomes properly vascularized and resumes its functional activity the cachexia does not show itself, but if the gland undergoes atrophy and degeneration the cachexia supervenes. Colzi and Ewald found that the transfusion of the blood of healthy animals into the circulation of those which had been deprived of the gland delayed the cachexia. Improvement always followed subcutaneous injection of the juice of the gland. These observers conclude that the gland removes from the blood certain substances which are injurious to it if allowed to accumulate—a condition analogous to uræmia after extirpation of both kidneys. Horsley found a diminution in the red corpuscles and an increase in the white corpuscles in experimental myxœdema. There was a diminished power of coagulation and an increase in the amount of globulin and mucin in the serum, and also an increase of mucin in the parotid and submaxillary glands. Horsley holds that the "thyroid gland is a structure essentially connected with the metabolism of the blood and tissues; that in fulfillment of its functions it is hæmopoietic both directly and indirectly, and that it forms, that is, secretes from the blood, a colloidal substance, which is transmitted *via* the lymphatics from the acini of the gland to the circulation."[1]

Cretinism is regarded by Bircher as essentially a different disease from myxœdema. It occurs endemically and is found at an early period of life, and is associated with goitre. The change in the facial appearance, the motor disturbances, and the alteration in speech and intelligence are common to both diseases, but we do not find the same changes in the hair, skin, and sensation as in myxœdema. In the latter disease the pathological changes are found in the soft parts, but in cretinism the principal deformity is produced by alteration in the form and arrangement of the bones. These are particularly marked in the skull, which

[1] British Medical Journal, January 30, 1892.

is much broader than in the normal state. The departure from the normal condition may be very slight in some forms, little being noticed beyond an enlargement of the thyroid. In another class of cases deaf-mutism is the principal symptom. In the more prominent type the patients are idiotic. The speech is affected in the great majority of all cases—a symptom rarely noticed in myxœdema. It is more common in male adults in its severest type.

The following series of four cases represent the extent of my experience upon the subject. They show that the milder forms can be easily removed by an operation apparently harmless, but one, at the same time, not without its dangers. When, however, we consider the great deformity and discomfort of a large bronchocele and the danger of sudden death, we are hardly authorized in declining to perform the operation.

Case I.—Cyst of thyroid. H. M., seventeen years of age, a domestic, was born in New York, but has lived for many years in Wakefield, Mass. She entered the hospital November 10, 1891. Her father died of consumption and she herself has never been healthy. Seven years ago she first noticed a little tumor in the front of her neck which has grown steadily, until two months ago a little additional nodule began to form below. On examination the thyroid gland appears to be symmetrically developed and a swelling about the size of a lemon occupies the median line of the neck; a smaller growth appears to be attached to the tumor at the lower right-hand corner. There had been occasionally slight disturbance of respiration, but the patient was anxious for the removal of the tumor, partly on account of the deformity, as it showed a tendency to increase in size. The operation was performed on November 15th. An incision was made in the median line about four inches long over the tumor, which, when exposed, was found to be cystic. When the cyst wall was reached it was enucleated without much difficulty from the normal gland-tissue. There was very little hæmorrhage; a quill-drain was inserted and the edges of the incision were brought together by interrupted sutures and a light, dry dressing was applied.

The patient rallied well from the operation, but about five hours after the operation, while my assistant, Dr. Bartol, was in the ward, respiration suddenly ceased, the patient became cyanotic and the jaws were firmly closed. Tracheotomy was performed by Dr. Bartol immediately and an elastic catheter was introduced and retained until a tube could be obtained. The tube was allowed to remain for forty-eight hours. The patient made a rapid recovery and was discharged December 3d with the wound entirely healed. She visited me recently, about a year after the operation, and was in excellent health, without any signs of thyroid enlargement.

The following report was made by Dr. Whitney: "Cystic growth from region of tyroid. Section shows several cysts; the largest was the size of a small peach filled with dark, reddish-black fluid, showing blood corpuscles, granular-corpuscles and cholesterin crystals. Section of wall shows normal thyroid tissue with here and there a tendency to cystic dilatation. Diagnosis: goitre with cystic degeneration."

Case II.—Cyst of thyroid. L. M., age twenty-seven, married; born in Massachussetts, lives in Quincy. Entered the hospital January 5, 1892. Her family history was negative. Was always well and has had five children. Four years ago the patient first noticed a small swelling in the neck which has grown very slowly and has never pained her. She states that she has some difficulty in swallowing and that her breathing is somewhat impeded and that she suffers from dyspnœa on exertion. On examination a tumor the size of a large hen's-egg is seen just below the cricoid cartilage on the right of the median line. It is soft and movable and ascends and descends with the movements of the trachea during the act of swallowing. Pulse 90 strong and regular. The eyes are not prominent.

A laryngoscopic examination was made on January 6th, by Dr. J. P. Clark, who states that the rima glottidis was practically in the median line; motion of cords free, although in respiration the right cord does not move as far from the median line as the left. Some prominence below the right cord of the tracheal wall. No evident diminution of the caliber of the trachea.

Operation, January 9, 1892. An incision parallel to the anterior border of the sterno mastoid muscle was made over the tumor, exposing the wall of the cyst, which was carefully dissected out with but little hemorrhage. It was found to contain a dark fluid. A small drainage tube was inserted and the edge of the wound brought together by silk sutures.

The stitches were removed on the sixth day, and the wound healed promptly except at the point of drainage, where a small sinus remained for two or three weeks.

Dr. W. F. Whitney made the following report of the microscopic examination: "A cystic growth the size of a small peach in the lobe of the thyroid. Microscopic examination showed portions of the gland in the wall of the cyst. Cyst of thyroid."

Case III.—Parenchymatous growth of thyroid. C. M., forty years of age, was born in Canada but lives at present in Boston; is married and had one child eighteen years ago, two still-births since. Her mother and one sister are both the subjects of goitre. Her general health has been good. Eleven years ago the patient first noticed a small swelling corresponding to the right lobe of the gland, followed later by a similar condition on the left side; eventually there was enlargement of the isthmus. The tumor has grown slowly and has varied considerably in size from time to time. During the past year there has been an increasing obstruction to respiration. The eyes are not prominent; the pulse is 115 and regular, but not strong. There is dyspnœa on exertion. The catamenia are regular.

On examination a tumor of dumb-bell shape is seen stretched across the trachea. The right lobe is about the size of an orange and the left lobe is the size of a goose-egg. There are numerous enlarged veins running over its surface. It is movable and rises with the larynx on swallowing. There is no pulsation.

Laryngoscopic examination by Dr. J. P. Clark: "Rima glottidis obliquely situated, being turned somewhat to the right. The trachea is bent to the left slightly. No constriction as far down as the fourth or fifth ring. Motion of cords apparently free and equal."

Operation, January 9, 1892. A curved incision with convexity downward was made from the apex of left lobe to that of the right lobe, and the operation performed as already described. Two small fragments of gland-tissue are left behind, one in the left lobe about the size of half a walnut, and one in the isthmus of the same dimensions. Two quill tubes were inserted to avoid pressure during the early oozing of the walls of the wound. The stitches and tubes were removed on the third day, and the wound dressed with collodion and cotton. A small collection of pus subsequently formed at the most dependent point of wound, and left a sinus which had not healed three months after the operation, when the patient left the convalescent home. There were at that time no signs of myxœdema.

Microscopical examination by Dr. W. F. Whitney: "Several large, dark, rounded growths from thyroid region. Section showed some small cystic cavities, the walls in places infiltrated with lime salts, but in general the growth was of the character of the thyroid, but with enlarged alveoli containing a colloid material. Bronchocele."

This patient suffered from aphonia for several weeks after the operation, and a laryngoscopic examination showed that the right vocal cord was paralyzed. The voice, however, was subsequently fully restored.

Case IV.—A. S., single, twenty-five years of age, entered the hospital February 1, 1892. She was born in Ireland, and lives at present in Dorchester. Her family history is good. She has always been healthy. Five years ago she first noticed a "bunch below the Adam's apple." This has grown steadily since, although it varies at times somewhat in size (Fig. 1). There is no difficulty in swallowing and no change in voice or breathing.

On examination an enlargement of the thryoid gland is seen on both sides, that on the left being about the size of a large orange, and about twice as large as that on the right. The tumor is non-pulsatile and moves with deglutition. The larynx and trachea are displaced somewhat to the right of the median line. There is no protrusion of the eyes. Extirpation of the gland performed February 6th. A semilunar incision, about five inches in length, was made from the apex of the left lobe downward and across the median line to a point considerably lower on the right (Fig. 2). A number of large veins were divided, but there was no great difficulty in controlling the bleeding, as the capsule was separated from the surrounding tissues. A portion of the right lobe, about the size of a horse-chestnut, was allowed to remain. One quill drainage-tube was inserted. and the edges of the wound were brought together by silk sutures. The dressing was applied loosely, but sufficiently firm to prevent exposure of the wound.

The wound healed by first intention, the drain having been removed on the second day. The photograph (Fig. 2) was taken about two weeks after the operation. A microscopical examination showed a growth similar to that found in Case III.

In a case of large cystic goitre, which recently came under my notice where tapping and the injection of iodine had been tried, the swelling and signs of suppuration induced me to lay open the sac freely and pack it with iodoform gauze, which operation was successfully performed without any trouble from hemorrhage. The tumor was about the size of a cocoanut. I have not yet heard of the subsequent history of the case.

THE NECESSITY FOR EARLY CORRECTION IN CONGENITAL CLUB-FOOT.[1]

By H. Augustus Wilson, M.D., Clinical Professor of Orthopedic Surgery.

Gentlemen: The cases brought before you this morning are of considerable interest and I would like to have you try to place yourselves in the position in which, as medical men, you must be placed when called upon to decide how to correct similar deformity, at what age it should be done, how long your efforts at correction should be continued and what will be the condition of the feet in after life.

The first patient, aged three months, is one with equino-varus, that was sent here by a graduate of the school. In the first place let us observe the position of the foot; it is the typical position of equino-varus, for the reason that there is present a compound variety of talipes. The inversion, or turning in, is very pronounced; if the patient could walk it would do so upon the outer side of the foot. There is equinus, because the heel would not touch the ground in walking. Both of these conditions being present in the same foot requires for its description a name which will designate the presence of the compound variety, and therefore it is called equino-varus. The question now arises as to the degree of severity of the condition in this case—to determine the character of the remedial measures to be employed. By gentle pressure I can completely overcome the varus, but I am unable to overcome the equinus. The tendo-achilles, or the gastrocnemius muscle, is shortened, hence this difficulty. The articulating facet of the astragalus is dislocated from the natural position in contact with the tibia, and is decidedly prominent upon the outside of the foot, and the astragalus itself is undoubtedly malformed. Here, then, is the case before you; now the question arises, What shall be done and how soon shall the treatment be started? Let us consider the arguments on both sides as to the earliest moment that correction would be advisable, and with that object in view, let us take as a basis the period at which the centers of ossification appear in the tarsal bones. That of the astragalus shows itself at the seventh month of fœtal life, and it is the astragalus that in the large majority of cases of congenital club-foot is the principal, although not the only, disturbing factor. The os-calcis has two centers of ossification, one of which appears at the same time as that of the astragalus—the seventh month; and the second, that for the great tuberosity, appears at the tenth year. The center for the scaphoid appears at the fourth year; for the cuboid, at birth; and for the three cuneiform bones, between the first and third years. If these bones of the tarsus are in a deformed position at birth, what is the condition of the bones themselves at this time? Are they ossified or cartilaginous? All the bones of the tarsus are in a cartilaginous state at birth; the centers of ossification of the astragalus and os-calcis only having appeared prior to this time, and that of the cuboid has just appeared. Accepting this, it would seem that the rational course to pursue would be to correct the deformity at the earliest possible moment, so that the process of ossification may go on in the proper manner, with the bones of the foot held in correct position, and it is therefore important to decide when that earliest possible moment is. Many surgeons urge that no case should be operated upon until the child is old enough to walk, at one or one and a half years. If we wait until then, however, we must know what the condition of the bones of the feet will be at that time. With the exception of the cuneiform bones, all have shown centers of ossification before that time, and the ossification has progressed in the deformed position in which they are held by any contracted soft tissues. This dry specimen shows a double congenital equino-varus in a still-born fœtus, showing the malposition of all the tarsal bones. If these bones had ossified in the position in which they now are, this process would have gone on while they were in a deformed position, and as a result, at the age of one or one and a half years, if we should divide the tendons, the effect would be to simply rearrange deformed bones, the period having elapsed when it was possible to materially alter their shape. I contend that it is not rational to wait until the doubtful assistance of walking can be secured, because I believe that it is clearly proven that the earliest moment at which you correct the deformed foot, the more satisfactory will be the ultimate result. This ultimate result, however, depends upon the completeness of the first correction, and as well upon the efficiency of the maintenance of the corrected position and the establishment of correlation of muscular forces. Relapses are the inevitable result of inefficiency on the part of those having the care or direction of the institution of remedial measures, and one of the prominent factors in these cases I have found to be incomplete early correction.

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[1] Delivered at the Jefferson Medical College Hospital.

The incompleteness of the early correction depended, in some instances, upon the late period at which correction was attempted, for I am abundantly satisfied that the best ultimate results I have had have been in cases where complete correction was accomplished in the first month, and persistent efforts maintained. In many of these cases I have found an entire absence of those signs of muscle atrophy which are so conspicuous in, I believe I am right in saying, neglected cases. Now, shall we take a child at the age of one month, or less, and divide the tendons or other contracted soft tissues, or shall we confine our efforts entirely to manipulation and the employment of restraining apparatus until a later period in the child's life? I know that there are those who advocate postponing operation until a later period, since in some cases manipulation alone will apparently elongate the contracted tendons. While it is improper to say that in all cases operative procedure should be resorted to, I firmly believe that the rule should be adopted, and, without exception, that complete correction should be accomplished at the earliest possible moment, and that this correction should be accomplished by the employment of every rational means, let it be operative, mechanical, manipulative or gymnastic, but it must be complete to be effective.

I believe that the soft bones of the tarsus will alter their shapes as they are squeezed and compressed by force, and leave the shortened tendons as much contracted as they were before, because we know that tendons rarely, if ever, yield, except by tearing, while cartilaginous bones, not yet ossified, will yield to pressure. I believe that you will find, on making an examination of such a foot, no elongation of the tendons, but an altered external appearance of the foot, due to the softened condition of the bones, their being squeezed into an external appearance of correction. I believe, therefore, that at the earliest possible moment we should employ any method which will be necessary to correct the deformity, and which will prevent a return to the deformed condition. It is a very unusual thing to have the opportunity of making a post-mortem examination in the age of early infancy, in a condition of congenital club-foot, whether it has had proper, or improper, attempts at partial or complete correction. I am inclined to believe that the malformation of the tarsal bones, seen in adult specimens, is often produced by the character of the manipulative force that was applied in early infancy, and that this would not have occurred had complete division of contracted soft tissues been made at the proper time.

I told you earlier in the course that it was necessary for convenience of study, to divide your cases of club-foot into three arbitrary divisions; the first variety including those in which the deformity is easily corrected, and the foot easily maintained in the correct position; the second variety is that in which the deformity can be corrected, but with difficulty, and immediately returns upon cessation of restraining force; and the third variety is that in which it is impossible to correct the deformity without recourse to surgical or powerful mechanical measures. This second child has one foot in a mild form of equino-varus. You will notice how easily the deformity can be corrected and how easily it is maintained in the correct position. There are no contracted tendons in this case, and it has been impossible to find diminished activity in any muscle. The displacement of the tarsal bones is slight, especially of the astragalus, and this is easily effaced. Here it would be markedly improper to perform any surgical operation, for there is nothing to operate upon, no contracted soft tissues to cut.

The child I had before you first affords an illustration of the third variety in which the varus only could be overcome, the equinus not yielding, and I bring her before you again to emphasize another point. Shall we proceed by force alone to try to overcome the deformity? I have already explained the disadvantages of such a procedure and will demonstrate the procedure that I consider essential. This morning I shall proceed to divide the tendo achilles, for the reason that that is one factor in the foot which maintains the deformity and prevents a correction. The patient comes from a distance, and the parents wish us to perform the operation and send the child home at once. I shall operate, however, and keep the child for a week, and then demand that the child be brought to us every two weeks to enable us to keep an oversight of the case. This is an ordinary experience, for it is curiously deemed a trivial thing to correct a club-foot in a baby, and that simple division of the tendo achilles is the cure. In reality the first correction, no matter by what means accomplished, is but means to an end. It is not only correcting the appearance of the deformity, but it is the correction of the mechanical defect so that the mechanical functions may be reëstablished.

The successful accomplishment of a cure of club-foot depends upon the efficiency of all three legs of a tripod, as it were correction, maintenance of the correct position and the establishment of correlation of muscular forces. And upon the tripod depends the efficiency of the treatment. I always insist that the patients, after the primary operation shall come under my observation again at a period of not over one month, and that not more than a month shall elapse without a critical inspection, that the progress may be watched to avoid neglect. If plaster of Paris is left on for any considerable length of time, an atrophy of the muscles of the leg must necessarily follow from disuse. The muscles in these congenital cases are usually perfectly normal at birth, but are induced to become atrophied by the means resorted to to overcome the deformity. After taking the plaster of Paris off, we shall in this case apply an apparatus permitting full free motion of the ankle, but holding the foot in natural position. I shall also instruct the mother how to manipulate the foot, so as to prevent atrophy of the muscles, by encouraging muscular development. The production of muscular atrophy, which is such a serious obstacle to correction of club-foot after infancy, is a profoundly interesting subject, and I have but to refer you to Chinese ladies' feet for evidence of what is too often done with club feet. The long-continued use of plaster of Paris, or mechanical apparatus of any kind that does not provide free ankle motion, will accomplish, just as successfully as the binder, a muscle atrophy. This muscle atrophy is, in turn, followed by atrophy of bones, not only in their diameter, but in their length as well. The natural tendency of a congenital club-foot is toward atrophy from disuse, and, therefore, we are warranted in resorting to every means to avoid its occurrence.

If the plantar fascia in this case is so tight or contracted as to hold the foot in the incorrect position, we shall divide that in addition to the achilles. The same thing holds true with reference to the flexors of the toes, if I find them unduly shortened. In brief, divide with a clean cut all soft tissues that restrain perfect correction, for unless you do this, you are sure to have an incomplete correction. In performing the operation, I put the foot first into a stretched position, and then mark with my thumb nail a point sufficiently far from the tendon, say one-fourth of an inch, where I insert my knife. The point at which the division of the tendon achilles is preferably made is just above the attachment of the tendon to the os-calcis. It is simply a matter of choice whether I cut from within outward, or from without inward. You can now see the degree of separation of the two ends of the tendon. There is a space here of fully three-quarters of an inch, which permits of elongation of the tendon to that extent. I apply collodion over the wound, to hermetically seal it, to prevent any contact with the atmosphere and septic germs, and therein lies the advantage of the subcutaneous method, namely the avoidance of the risk of suppuration. Notwithstanding the greatest care, however, there is always danger of infection taking place, no matter whether an open wound is made or the operation is done subcutaneously. The subcutaneous method has the least risk, in that only a minute puncture is made, with immediate closure of the wound. I always prefer the open method, for it is far more skillful and accurate, and avoids the necessity of cutting other tissues than the tendon to be divided.

The length of time required for a tendon to unite, is from one to two weeks, and at the end of three weeks the new formed structure is as strong as any other part of the tendon. Immediately after tenotomy the foot should be placed in an over-corrected position, so as to separate the divided ends of the tendon as much as may be required, depending upon muscle contraction to shorten it when necessary. The method of putting the foot into the deformed position, or in only a partially corrected position, should not be observed, because it will be necessary to stretch something later, or re-divide the tendon. To stretch this newly formed tissue is to weaken it by making it attenuated. I believe I have never known a tendon to fail to unite, although great separation of the divided end has, in some cases, taken place.

Now the question arises in the application of our maintenance apparatus of plaster of Paris, what is the object to be accomplished by its use? In the first place, to mold the foot into a proper position and force the tarsal bones to occupy positions approaching the normal. The foot is now in an over-corrected position, being extended to less than a right angle and slightly everted, and the plaster of Paris will hold it in this position. In about two weeks the tendon will be strongly united, and enable us to begin our manipulation. Then will be the time to apply our steel maintenance apparatus, and it must be prescribed with a definite object. That object is, I am sure, now clear to you, and I will therefore indicate its essential features. A free ankle joint, obtained by having that part which is attached to the sole of the shoe, joined to the upright lateral leg bars, at a point above the tip of the malleolus. Just below the knee a semi-circular band holds the upright bars in proper position, and is strapped and buckled in front. There must be nothing whatever to prevent free motion of the ankle in the natural hinge motion. It is often expedient to use elastic traction as a means of maintenance, and where this is sufficient and is desired, it can easily be accomplished with the use of elastic rubber bands, held in place by adhesive plaster. I never like to leave the plaster of Paris on longer than three weeks altogether, because its use is not beneficial and its long continuance sure to be prejudicial. The child being under ether, I have no hesitancy in using as great force as may be necessary to overcorrect the foot.

There is danger to be avoided in the use of plaster of Paris, to which I must direct your attention, for it has occurred, or been threatened sufficiently often to be a warning of the possibility of its occurrence. I refer to the possibility of construction and strangulation, and the possible production of gangrene. There need be no fear of this if you carefully instruct the mother to frequently observe the condition of the circulation, by pressing ûpon the toes, and observing if the pink flush follows the white appearance produced by the finger. To make this possible, you must, of course, leave the toes uncovered, and it should be a rule never to cover an entire extremity, because you want to know what is going on there. Should the mother notice any apparent interference with the circulation, she can call your attention to it, and you can, if necessary, remove the cast and reapply it. Plaster of Paris always contracts in setting, and a knowledge of this will prevent the application being made too tight.

The length of time required to accomplish a full and complete correction of a congenital club-foot is the same as that required to form the foot of a normal child. Not until a child is ten or twelve years old does a foot possess the normal mechanical conditions necessary for its full usefulness. All babies are flat-footed, many are naturally pigeon-toed, but all of these conditions pass off where there is a natural tendency to do so.

The same thing may be said of a child born with a club-foot, certainly in the milder forms, that until the age of twelve years the correction must be maintained mechanically, and efforts must constantly be made to develop the muscular systen.

That which in the normal child prevents the foot from becoming deformed, although it may be placed temporarily in a deformed position, is the correlation of muscular forces, and this must and can be established in cases of club-foot that are corrected sufficiently early. You must avoid the absurdity of resorting to gymnastic forms of treatment, and at the same time destroying its efficiency, by the use of mechanical restraining apparatus, that not only prevents the reproduction of the deformity but at the same time restrains all motion. Thus I have seen rigid plaster of Paris in constant use in cases where it was removed every day for half an hour, and, during that time, development methods employed. To accomplish a complete recovery, there must be an understanding of the mechanical functions to be recovered, and this is apparently absent in those who simply cut tendons and allow the case to relapse by neglect, or who consider braces to be curative.

SKIN-GRAFTING ACCORDING TO THE METHOD OF THIERSCH.

By Leonard Freeman, B.S., M.D., Cincinnati.

A year ago I had the pleasure of bringing before you a case of skin-grafting, according to the method of Thiersch. I propose to again call your attention to this interesting subject. It is in general the most satisfactory process of skin-grafting which has ever been employed, and has a most extensive applicability; and yet, for some reason, it has not come into the general use which it deserves.

By means of the Thiersch-method it is possible to cover with epithelium ulcerating surfaces of fresh wounds of almost any character or extent in from ten days to three weeks. And further: embarrassing cicatricial contractions can be prevented; and the stoppage of suppuration and other septic processes, which follows a successful skin-graft, may be instrumental in saving life. Its cosmetic value, in many cases, can scarcely be overestimated.

The method, as I have used it, is briefly as follows: For several days previous to the operation, the ulcer (we will suppose that a crural ulcer is to be grafted) is sterilized, as far as possible, by the constant application of compresses wet with sublimate solution (1: 3,000 to 1: 5,000), careful attention being given to the cleaning of the surrounding skin, and the removal of loose epidermis and dead tissue. An hour or two before operating, the skin of the thigh, from which the grafts are to be taken, must be sterilized, and wrapped in towels soaked in bichloride-solution. The patient is anæsthetized, and the soft upper layer of granulations covering the ulcer completely scraped away with a sharp spoon, until firmer tissue is reached beneath. This layer is sometimes surprisingly thick, but it must all go, although a considerable depression may result. The thickened margins of the ulcer may also be scraped and trimmed away, and the entire surface leveled off as far as possible.

Some endeavor to sterilize the ulcer at this point, they affirm with success, by the use of strong antiseptics, such as 1: 1,000 bichloride. Thiersch counsels against this as endangering the vitality of the grafts, and recommends the employment, for purposes of irrigation, of nothing stronger than a 0.6 per cent. solution of common salt. Hemorrhage is nearly always readily checked by elevation and pressure by means of pledgets of gauze, which Kleinknecht prefers to soak in peroxide of hydrogen. A piece of rubber protective between the gauze and the bleeding surface prevents the tearing away, when the pressure is removed, of the clots which seal the mouths of the vessels. It is better to check the hemorrhage thoroughly, so that the surface remains "dry."

The next step is to remove the grafts from the thigh. The best instrument for this purpose is a sharp razor (Halstead uses an amputating-knife). An assistant stretches the skin as tight as possible by means of a hand on either side of the thigh. The operator stands with his back next the patient's foot and cuts toward himself, with his left hand stretching the skin in the direction of the knee. With a backward and forward sawing motion it is easy to remove a thin shaving of epidermis an inch or so wide and several inches in length. It is not necessary, and perhaps not desirable, to include the entire thickness of the skin, but only sufficient of it to cut through a number of papillary vessels and leave a lot of bleeding points.

The grafts thus obtained, being as thin as paper, fold into a bunch upon the razor as they are being cut. The end of the graft is now slid off the edge of the razor with a probe onto one side of the scraped ulcer, and held there while the razor is slowly moved across the raw surface, spreading out the graft in its course, in the same way that a nurse spreads a sheet beneath a bedridden patient. If the edges become turned under at any point they must not remain so, but must be pushed backward and forward with a probe until they are unfurled and in their proper positions. The entire graft must then be smoothed out and pressed close to the underlying surface.

In a similar manner other strips of skin are shaved off and placed on the raw surface, until it is completely covered. It is better that the grafts not only slightly overlap each other, shinglewise, but that the margin of the ulcer itself should also be covered. But the process is often successful when this point is not strictly observed—new epidermis rapidly covering in the narrow, granulating strips between the grafts; although some contraction is then liable to occur.

In dressing the grafted area, strips of rubber protective are usually laid on first; but I prefer another method which I devised some years ago. It consists in covering the grafts with a single, smooth, closely applied layer of gauze. This may be pinned around the limb, or held in place by strips of adhesive plaster at a distance from the margin of the ulcer. The grafts are thus held firmly in place, and the layer of gauze need not be removed until they have become solidly attached; although the dressing above may be changed as often as may be necessary. Pus generally accumulates beneath strips of protective, macerating and often destroying the delicate layers of transplanted skin. With the gauze dressing this is easily avoided, as the pus passes through the gauze and is either absorbed or else may be washed away at once.

Thiersch considers it highly desirable, in order to preserve the vitality of the grafts, to apply a moist dressing, and this I have always done, except in one case, which proved a complete failure.

This dressing consists simply of a quantity of crumpled gauze, wet with sterilized 0.6 per cent. salt solution. I have been in the habit of covering this with first a layer of sublimate gauze, to ward off too rapid infection, then a layer of cotton and a sheet of oiled silk, to check evaporation, and lastly another protecting layer of cotton.

Thiersch contended that the dressings should be moistened every few hours; but others, including McBurney and Halstead, have shown that it is sufficient if the moist dressing be renewed every second day, and I have sometimes let it go much longer than that.

Fomin, of St. Petersburg, prefers the dry method of dressing, as do also Hübscher (*Beitr. z. Klin. Chir.*, Bd. IV.) and Jungengel. Fomin resterilizes the ulcer with strong bichloride after scraping, washes with distilled water, dusts the grafted surface, as does Jungengel, with iodoform, and applies an ordinary dry antiseptic dressing. The whole operation is done under local cocaine-anæsthesia alone. Hübscher re-sterilizes the scraped ulcer and sometimes uses boric acid and vaseline as a dressing. Fowler prefers the potassio-mercuric iodide as an antiseptic. All these operators report good results.

The slightly bleeding surface, from which the grafts were taken, is washed with bichloride and covered with an ordinary aseptic or antiseptic dressing, which may usually be left in place until new epithelium has formed—say two or three weeks. McBurney recommends that the thigh be dressed with the salt solution. He claims that healing takes place quicker and with less pain. I have tried this plan, but could see no diminution in either the pain or the time of healing, while the danger of infection is certainly increased.

Eight to ten days are required for the grafts to become united, and during this time, at least, it is perhaps desirable to keep up the moist dressing, although some surgeons advise changing to the dry iodoform-dressing in five days. When the wet dressings are finally discontinued, I have found it well to apply some sort of ointment, such as aristol ointment or simple vaseline. This prevents the drying and cracking of the new skin, and the adherence of the dressings.

Quite often, on examining the transplanted surface, a few days after the operation, or at the end of ten days or two weeks, the grafts will appear not to have taken—they will apparently have disappeared, or will seem to adhere to the overlying gauze and be pulled away with it, leaving the surface of the ulcer with a whitish, macerated appearance. This does not necessarily mean failure. It generally means that the outer layers of epidermis, those receiving little or no nutrition, have separated from the rest of the graft, leaving the rete malpighii behind. In a few more days the surface will again become covered with epithelium.

With infected surfaces, particularly old ulcers, suppuration nearly always occurs, especially if salt-solution only has been employed; germs *will* remain deep down among the granulations. But, up to a certain point, the cleaner the ulcer and its surroundings, the longer will suppuration be delayed; and at the end of five days, according to McBurney and others, it can do but little harm. This last statement I have repeatedly found to be true; and also that the formation of pus much sooner than this does not always indicate failure—indeed, Halstead mentions a satisfactory result obtained by transplantation onto the already profuse suppurating surface of a burn.

As has been mentioned, the majority of operators, including Thiersch, do not use antiseptics, at least after the ulcerating surface has been scraped, for fear of damaging the capillary circulation. Others, however, report numbers of cases in which strong antiseptics have been employed with the best results, and with the desirable effect of preventing suppuration. When antiseptics are used, it is best to wash them away with distilled water or salt-solution before the transplantation is made. In my experience, plain, sterilized water has answered every purpose just as well as salt water.

There are different views regarding the use of a general anæsthetic, some, such as Fomin, Plessing, Jungengel, Fowler, etc., claiming that it is unnecessary; while others seldom, if ever, operate without it. Fowler says that an anæsthetic is injurious to the grafts, but this is probably not true. When the surface to be grafted is quite small, or the individual not too sensitive to pain, anæsthesia may perhaps often be dispensed with, but in most cases it is highly desirable. Even when cocaine has been injected near the seat of operation, I have found the pain quite severe, and the realization of the operation is far from pleasant to most patients.

In the healing of a granulating surface, as Thiersch long ago pointed out, it is comparatively large, loose-meshed, superficial granulations which cause the most of the cicatricial contraction—they must shrink a good deal before they can form connective-tissue. The lower layers have already contracted to nearly their full extent. Hence, if the upper granulations be removed, and the transplanted skin placed directly on the lower, subsequent embarrassing contractions are avoided. The grafts also sit firmer on the deeper tissue, and are not so liable to be pushed off by capillary hæmorrhages which easily arise from spongy granulations. As pointed out by Fowler, if this deeper tissue is so firm as to interfere with the capillary circulation, it is useful to make a number of linear incisions through it about an eighth of an inch apart.

McBurney asserts that one of the most remarkable points about Thiersch's method is the way in which depressions fill up under the grafts. This is probably true in general, but not always. In one of the cases which I shall present this evening (a crural ulcer) the grafted surface is considerably depressed, and the depression is just as marked as it was ten months ago at the time of the operation.

After the lapse of several weeks the new skin often becomes more or less movable upon the layer beneath, and to aid in this careful massage has been recommended. Until this has taken place, and even for some time afterward, the grafted area should be well protected from external injuries, as insisted upon by von Hacker; for some time, the slightest contusion, or even marked changes of temperature, may cause a breaking down of the new tissue. It is best to use a flannel bandage for this purpose—not one of rubber.

As to the best time for grafting: one may utilize a fresh wound surface with good prospect of success; but after granulation has set in it is considered better to wait several weeks—Brockway and Thiersch himself say about six weeks, but Cheyne claims that this is unnecessarily long. The reason of this is that a layer of firm granulation-tissue may have time to form beneath. The superficial granulations should not be too flabby and secrete too freely, but should be small and red—such as result from the use of astringents and pressure.

It is, of course, desirable to have a healthy sore, which already shows signs of healing, as is insisted upon by Cheyne, but this is not necessary—the suppurating surfaces of malignant, syphilitic and tubercular ulcers have often been successfully grafted.

It is claimed, and I have noticed it myself, that any pain which may be present in the ulcer ceases after the operation, and this is a point worth remembering. Indeed, the place from which the grafts have been taken is generally the only seat of pain.

The shavings of skin are generally obtained from the anterior surface of the thigh, although Franke prefers the outer portion, because it can so easily be put upon the stretch by adduction of the extremity, but the upper arm or some other portion of the body may be used, if more convenient. Practically no scar results, as will be seen in the case of one of the patients before you, although the skin remains reddened for some time, and successive grafts may be removed from the same area, with sufficient intervals of time between the operations.

Cheyne (*London Pract.*, 1890) insists that the entire thickness of the skin should be used, best that of the chest or flexor surfaces of the limbs, avoiding the subcutaneous fatty tissue. The general experience of operators has been that this is totally unnecessary, if not undesirable, although Fowler claims that it is better to take somewhat more than the mere ends of the papillæ. As far as my own experience goes, thin sections have proved perfectly satisfactory, and have lasted just as well as thicker ones placed beside them. Cheyne dissects off strips of skin and cuts them into pieces one-half inch long, the resulting wound being stitched together at once.

For a long time after a Thiersch operation the outlines of the grafts can be more or less easily traced, but sooner or later they disappear, as will be noticed in the cases before you ; but, according to Jungengel, one can see a difference between the old and new skin for at least two years.

In general, the skin from young subjects seems to grow better than that from old ones. Ivanova has emphasized this in grafting from the bodies of new-born infants. It has even been noticed that when grafts from old people, replanted upon themselves, refused to grow, skin taken from younger individuals grew at once. The experiments in this line, however, are not conclusive, as cases proving just the contrary have been noted.

Caution must be exercised in transplanting skin from one person to another, as a number of diseases, such as syphilis, tuberculosis and small-pox have been thus inoculated.

When the skin of a negro is transferred to a white man it soon loses its black color. Whether the converse is true or not is disputed, Fowler claiming that it is not, and Karg (*Arch. f. Anat. and Phys.*, 1888) asserting that the grafts gradually accumulate pigment by means of a phagocytic action of their epithelial cells upon the pigment granules. Thiersch asserts that skin from a negro grows easily upon a white man, but that white skin cannot be transplanted to a negro. It would require many experiments to settle these points, because a certain number of operations are always failures.

It is astonishing to what useful purposes this skin grafting may be applied—old ulcers of all kinds, including the intractable crural ulcer ;

fresh wounds with loss of skin; defects remaining after the sliding of flaps in plastic operations, or after the removal of tumors, nævi, cicatrices etc., and extensive burns, where subsequent contraction is feared. Debilitating, suppurative and septic processes may be checked by its means, and sometimes life thus saved. Amputation may at times be avoided, as, perhaps, may be claimed in a case which I shall show you this evening. The offensive ulcerating surfaces of inoperable malignant tumors may be skinned over, as demonstrated by Kraske. Tubercular diseases of the skin, such as lupus, may be cut and scraped away, and the defects filled in with Thiersch-grafts—as in one of my own cases. Flat nævi may be shaved off and replaced by new skin, which causes but a comparatively slight disfigurement; and even obstinate cases of lupus erythematosus have been successfully treated in this manner. The grafts will adhere, although not so readily as to skin, to periosteum, to bone, from which the external surface has been removed, to tendons, fascia, dura mater, muscle, etc. Certain mucous surfaces may also be grafted.

Thiersch-grafts last better than the skin of chickens, puppies, or frogs (Fowler), and certainly are vastly more convenient to obtain.

Cheyne (*Lancet*, 1891) has called attention to the very great value of the Thiersch-method in amputation of the breast for carcinoma. One of the causes of failure to remove the growth is that the bands of fascia between the gland and the overlying skin often contain microscopical prolongations of glandular tissue, which are infiltrated with cancer-cells, so that the skin must be very extensively removed if the operation is to be a success. This is a reason why caustics are at times more efficacious than a knife. With the Thiersch-method at command, as much skin as desirable may be cut away without prolonging the healing of the wound.

In the cases on which I have operated I have had but two failures. One of these was an ulcerated stump of a leg, which had been amputated just below the knee, and was permanently flexed at a right-angle to the thigh. The limb was not elevated, as it should have been, and the grafts were soon rubbed off against the bed. The other failure was in connection with a large tubercular ulcer over the sternum. I tried the dry dressing according to Fomin. Suppuration soon occurred, from a sinus penetrating the sternum, and none of the grafts lived.

One of my cases was a boy, aged nineteen, whose hand had been badly crushed by machinery. The entire dorsum was occupied by a granulating surface, which presented little tendency to heal, and if healing had finally taken place there would have been much contraction. The dressings were all removed on the ninth day and the grafts found adherent. The superficial epithelium came off over a small area, but was soon re-formed. I saw this patient several months after the operation.

The new skin was in perfect condition, somewhat movable, and no apparent contraction had occurred.

In another case, Pat. L., aged thirty-four, I grafted a large leg-ulcer which had existed for years, and for the treatment of which the patient had been very frequently in the city hospital, the affection requiring much time and patience to heal, and then rapidly breaking down again. At the end of thirteen days the grafts had taken firmly. The patient went to work on the streets, shoveling coal, drinking hard, and taking no sort of care of his leg. Nevertheless, in spite of these unfavorable circumstances, the ulcer remained well for more than four months. It is a fact that Thiersch-grafts have less tendency to break down than the scar-tissue resulting from ordinary methods of healing.

An Italian boy, aged eighteen, an epileptic, had a large cicatrix from a burn over the anterior surface of the knee, which bore an ulcer the size of the palm of the hand, which refused to heal. The patellar bursa had been opened, and the surface of the sore was much roughened and sacculated—a very unfavorable case. On the tenth day about one-half of the grafts had taken, leaving several broad granulating strips between, which, in the course of time, became covered by epithelium and the patient was discharged. Before long he was re-admitted to the hospital, the ulcer having broken down in places from a contusion received in an epileptic fit. It was interesting to note that the portions which had re-ulcerated were those over which the skin-grafts had originally failed to take, the grafted areas remaining perfectly sound.

In another instance, Dr. Ellis, interne at the hospital, and myself grafted several crural ulcers on patient Sebastian R., aged forty. He had been afflicted with these ulcers eight or ten years, and during that time had been in and out of the hospital repeatedly. On the inner surface of the lower part of the right leg was an ulcer one and one-half inches in diameter; on the posterior surface another two inches in length, one inch in width, and quite deep; and near this still another one-half inch in diameter. On the anterior surface of the left leg was an ulcer one and one-half inches in diameter. There was much thickening and pigmentation of the surrounding skin. After the transplantation had been made, the right leg was suspended from a "cradle," to prevent rubbing against the bed. The result, at the end of the usual length of time, was perfect.

In about nine months this patient returned to the hospital, on account of an abrasion of the skin of the leg—not over any of the grafted areas—caused by the kick of a horse. The old ulcers were still as sound as when he left the institution, and they remain so at the end of ten months, as you will see when I present the case for your inspection. It is noticeable that the new ulcer, for which he is now in the hospital, shows little progress in healing, although he has been under treatment three or four weeks at least. An interesting point is that the considerable depression occupying the site of the large ulcer has never filled up, but is as marked as ever. The new skin is perfectly firm and slightly movable, but is easily distinguishable from the surrounding integument. No contractions have taken place—there is no puckering of the surface. The thigh, from which the grafts were taken, shows a few very delicate, white cicatrices.

This patient, unlike the one mentioned above, has taken at least fairly good care of his leg, keeping it wrapped in a bandage most of the time. He is, however, a heavy drinker, and has worked constantly as a hostler.

John G., aged twenty-four, had a good-sized granulating surface on the second toe, resulting from a crush. This was successfully grafted by Dr. Ellis with skin taken from the thigh, under cocaine.

An interesting case was one in which the right foot was badly crushed in a railroad accident. The member was finally saved, but with the loss of a large amount of skin over the inside of the foot and ankle and posterior portion of the sole, including the heel—an area somewhat larger than the entire hand. A Wladimiroff-Mickulicz operation was discussed, but it was determined to try skin-grafting first. The grafts adhered without difficulty, notwithstanding that suppuration was present almost from the first, and the ulcer was soon practically well; although another small sore in the vicinity, which I did not graft, failed to heal for several weeks thereafter. I shall present the case to you this evening as one in which it is possible that the Thiersch-method has saved a foot from amputation.

Since writing this paper my attention has been called to an article by Urban (*Deut. Zeitschr. f. Chir.*, 1892) who has collected 350 cases grafted in the Leipzig Clinic within the last five years. These he divides into a number of separate groups, and discusses the interesting points in connection with each group. He states that the surface of old chancroidal ulcers and open buboes may be speedily covered with new skin, and gives many cases in which grafts were made to adhere to bone, following operations for necrosis.

PROCEEDINGS OF SOCIETIES.

AMERICAN NEUROLOGICAL ASSOCIATION.

Eighteenth Annual Meeting, Held in New York.

The President, Dr. Charles L. Dana, of New York, in the chair.

The president, in opening the proceedings, said that, in view of the immense amount of work before the session, he should waive the usual address. He briefly reviewed the progress of the association since its inception, making mention of members who had died since the last meeting, and paying special tribute to the memory of the late Dr. Birdsall.

The Sleep Movements of Epilepsy.—Dr. J. W. Putnam, of Buffalo, read a paper with this title. In attempts at localizing the seat of irritation in the brain in cases of epilepsy we had as a guide the history of former injury to the head, of which the proof was in the finding of adherent scars in the scalp, sometimes in a distinct depression in the skull. When there was no history of cranial injury, we often got a history of the character of the attacks, and upon this history of the aura and of the muscles first convulsed we were obliged to rely in localization. Owing to the nature of the disease, dependence had to be placed upon the observation of others in regard to preliminary movements. In the experience of many it had been difficult to obtain clear and positive statements as to the manner of the beginning of an attack. The author had had a patient who was having a convulsion almost every evening. While waiting to observe an attack, he had noticed that the patient was restlessly tossing her left arm, while the right one was quiet. The movement was different from the ordinary purposeless movements of restless sleep. It was a slow raising of the arm from the chest or side up over the head, where it would remain for a moment, and then slide down the pillow. This occurred several times. No movements of the legs were observed. There was no convulsion on the night of the observation, but the mother said that during attacks the patient always turned on her left side. The author thought that a series of observations of epileptics during sleep might show similar movements that might be of localizing value. He had made a study in this direction and was satisfied that much could be learned in regard to localizing the seat of trouble by having a record made of the sleep movements. In attempting to interpret these sleep movements he had carefully read the literature on epilepsy, but could find no mention of observation in this direction. Hughlings Jackson had assumed that there were three levels in the motor nervous system, which he had called the highest, the middle, and the lowest. The highest, chiefly motor, was the frontal lobes; the middle level was composed of the portion which we understood as the motor region, comprising the ascending frontal and parietal convolutions and the corpus striatum ; the lowest level consisted of the cornua of the spinal cord, Clarke's column, and Stelling's nucleus. Starting with this theory, the author ventured the following explanation : When the patient was in a profound sleep all these levels were in a state of functional rest and there was quiet sleep undisturbed by movements, as no stimulus was transmitted to the muscles. In a less profound sleep—one in which the patient was restless—he had assumed the highest level to be at rest and no longer exerting an inhibiting control over the middle level. This in a healthy person would show itself by general restlessness. In an epileptic, in whose motor region there was an irritated area of greater excitability than normal, it was assumed that it was less profoundly asleep than other areas. Hence in such conditions there might be pronounced and definite movements occurring during sleep, and limited to the limb controlled by the irritated area. These movements might occur in only a few patients, and in those only when slumber was disturbed. Whether or not he was right in his interpretation, and whether it would be considered safe to localize a lesion from sleep movements alone, he could not say, but wanted to bring the question before the society for discussion.

Dr. J. J. Putnam, of Boston, thought that in epilepsy, as a rule, the lesion consisted of diffuse sclerotic changes acting diffusely as poisons did. The focalized expression of these changes indicated that certain portions of the brain were, or had become, relatively more influenced by the morbid changes. Operative procedures were not likely to succeed if this theory was correct. He should be disinclined to operate for localized movements occurring during sleep.

Dr. Sachs thought that sleep movements might point to the fact that the center governing the part moved in sleep was more irritable than normal. He was reluctant to attach too much value to the sleep movements as a symptom, but supposed we should now hear much more on the subject than heretofore.

Dr. J. W. Putnam had not felt that it would be justifiable to have operations undertaken upon observations of the sleep movements alone; still, he thought they indicated the seat of irritation, and hence there was added one more strand to the rope of evidence.

Separate Provision for Epileptics, both Public and Private.—Dr. Henry R. Stedman, of Boston, read a paper on this subject. He entered a plea for the exclusive care of epileptics in special establishments, on the colony plan, throughout the country. He characterized epileptics as the most neglected class of sufferers by disease, and deplored the fact that so much attention had been paid to the pathology and medical treatment and so little to their care and protection. The amelioration by proper medical supervision in surroundings where their lives could be regulated and their capabilities in the way of employment developed seemed not to attract the attention it ought. That the plan was practicable the colonies for epileptics in other countries, particularly in Germany, had proved. The dangers to these patients from exposure and accidents of various kinds were very great, while the ostracism of many of them from ordinary intercourse with their fellows, from the schools and from places of worship and amusement, and, above all, the fact that they were debarred from obtaining employment on account of the malady, rendered their lot particularly hard. The danger to the community, too, from certain epileptics was touched upon. The deplorable condition of these unfortunates in almshouses, where there were large numbers in most of the States, could not be too severely characterized. The usual practice of caring for these patients with the insane in lunatic asylums was a great disadvantage to both classes. The epileptics were not legitimate recipients of such care, and prevented the insane from receiving the full amount of attention they should have, while they themselves were deprived of suitable healthful employment. Dr. Stedman also gave a short account, illustrated by charts and views, of the famous epileptic colonies at Bielefeld, in Germany, which he had recently visited. He closed his remarks with the hope that some step might be taken in this country to establish like institutions.

Dr. Bullard said that in Massachusetts steps had already been taken to further the establishment of suitable special institutions for the care of epileptics. A bill had been prepared by a special committee and presented in the proper quarter. It was hoped and believed that next year this bill would be passed and the money forthcoming to secure the end in view.

Dr. Frederick Peterson, who is the pioneer of the present movement in New York State, urged the necessity of energetic support of the measures already taken, and said that if his hopes were realized, one hundred and twenty thousand epileptics would have opportunity for instruction and of leading useful lives.

Dr. W. M. Leszynsky asked if it was intended to include the care of persons with chronic epileptic insanity. He should think these formed an undesirable class to colonize with the ordinary epileptics.

Dr. Tomlinson said there was no more unsatisfactory class of patients in institutions for the insane than the epileptics. Not one of these institutions was suitably equipped to care for them. If they were associated with the violent and demented, their lives were rendered still more uncomfortable. Unless they were themslves demented, epileptics were generally alive to their condition and surroundings, and it was from them that complaints generally came. It was very necessary that they should receive special attention. There was always a tendency on the part of this class to eat voraciously. Constipation was a frequent condition among them, and the self-infection thereby produced increased the frequency of the seizures. If separate treatment, occupation, and proper diet could be provided, epileptics could doubtless lead more comfortable. and in many cases really useful, lives.

Dr. Sachs was in favor of provision by the State for these patients, but thought that much must be done by private endeavor. There was a well-to-do class among the epileptics most difficult to dispose of. Many of the younger epileptics had no opportunity for proper education. It had seemed to the speaker that for these there should be provided private institutions where it would be made an object to give distinct educational advantages.

Dr. Stedman said that it would, of course, not be wise to associate violent epileptics with those of the milder class. Buildings could, however, be provided on the colony where the severe cases could be cared for. It would not be expedient to take the mild ones from the asylums and leave the worst ones there. He agreed as to the desirability of charitable work in the scheme, but it seemed difficult to effect the desired end in this way, from the very great lack of interest in this unfortunate class, and it was only by State care that there was hope of benefiting them.

The president thought that a direct opinion on the subject by the association might bear weight with the Legislature, and hoped that some such expression would be formulated. The following resolution was, on motion of Dr. Stedman, then adopted: "That it is the unanimous sense of the American Neurological Association that the proper care of the epileptic class, so long delayed, be urged upon the public, upon State authorities, and especially upon all interested in the care of the sick and defective poor, whereby they may be relieved from the asylums and almshouses, and may receive the required care in such separate establishments as their deplorable situations demand."

OBSTETRICAL SOCIETY OF LONDON.

A meeting was held on July 6th, Dr. J. Watt Black, president, in the chair.

On Menstruation in Cases of Backward Displacement of the Uterus.—Dr. Herman read a paper on Menstruation in Cases of Backward Displacement of the Uterus. The paper was based upon an analysis of 388 cases of retroversion and retroflexion of the uterus. In about 60 per cent. of the entire number there was no alteration in the quantity of the menstrual flow. In some 20 per cent. there was amenorrhœa, but in every instance of amenorrhœa it was accounted for by causes irrespective of the displacement. In about 50 per cent. of those in whom the menstrual function was not in abeyance there was no alteration in the quantity. In nearly 40 per cent. hæmorrhage was increased. In patients of the same class as those in whom retroversion and retroflexion commonly occur, but whose uteri are normal as to position, the frequency of incidence of causes of hæmorrhage other than gross organic disease and pregnancy is probably about 30 per cent. The proportion of women with backward displacements who suffered from hæmorrhage was thus larger by about 10 per cent. than the proportion of women whose uteri are normal in position. It was therefore reasonable to believe that in this small proportion of cases the hæmorrhage was due to the displacement. Among women with backward displacement of the uterus in whom the menstrual function was not in abeyance pain at the period was absent in only about 20 per cent. Menstrual pain was commoner in those women who had backward displacement of the uterus than in those who had not; and also in those who had increased hæmorrhage.—Dr. Hayes thought the value of the paper impaired by the fact that the amount of hæmorrhage in the cases was not specified. Hæmorrhage varied so much, even in healthy women under trifling distractions, that comparisons were difficult and misleading. Again, in backward displacements the ovaries were often prolapsed, giving rise to troublesome bleeding; in the paper no mention was made of the position of the ovaries. Respecting the dysmenorrhœa, he would have liked some specifications of the amount of pain in the individual cases.—Dr. Rutherfoord asked how many of the 40 per cent. of the women with increased menstrual flow were multiparæ, and what was the average number of children per woman. He thought subinvolution, as well as retroflexion, might account for the menorrhagia.—Dr. Heywood Smith asked if any observations had been made among so large a number of recorded cases as to the number of cases of retroflexion of the gravid uterus.—Dr. Herman, in reply, said that no doubt in many of his cases subinvolution existed; this was also present among the cases with which he had compared those of displacement. He did not think subinvolution was especially common in multiparæ. Prolapse of ovary was present in many of his cases, but he did not know the exact number. He had often observed pregnancy occur in backward displacement, though he could not, without reference to his case-books, say how often. In a paper read in December, 1891, he had discussed this point. He found the sound generally caused pain in patients of all classes when it passed the internal os, but he had not perceived anything to make him think there was stricture at the internal os.

PHARMACY AND THERAPEUTICS.

THE PRESCRIBING OF PEPSIN.

There is probably scarcely a first year medical student who has strictly attended his lectures on physiology that does not know that pepsin is the digestive ferment which is active in the presence of hydrochloric acid and inactive in the presence of an alkali, and there is hardly a practicing physician of very wide experience who will not say that he has seen or heard of pepsin being administered with bicarbonate of sodium or other mild alkali in the treatment of gastric disorder with very marked benefit to the patient, which is not obtained when the carbonate of sodium is administered alone.

What at first seems to be pure empiricism opposed to scientific fact rests, however, upon a physiological basis.

Many years ago it was pointed out by Dr. Ringer, of London, that cases of gastric indigestion existed in which better results followed the administration of alkalies than of acids, and he explained this apparently paradoxical statement by the well-known physiological fact that the presence of an alkali in the stomach produces such an outpouring of gastric juice to overcome the alkalinity that an actual improvement in digestion takes place through the profuse secretion.

The *Brooklyn Medical Journal* for April, 1892, has a short editorial upon the subject, in which the editor says that if pepsin is prescribed with an alkali as frequently as has recently been stated, "then a most lamentable ignorance exists among physicians as to the physiology of digestion." While our contemporary is correct theoretically, practical experience of many hundreds of physicians, as we have already pointed out, shows the prescription named to be useful, and we have often been led to believe that pepsin, when used in cases of gastric disorder, exercises an effect on the stomach which is entirely distinct from its digestive function. This good effect is seen in many instances of nausea and vomiting, which persist after all food has been expelled from the stomach, or in cases of morning sickness, when the very emptiness of the stomach prevents a digestive influence by the pepsin from being exercised.—*Therapeutic Gazette.*

Naphthol may still be classed among the newer remedies which have not gone to the wall, and while one of the most powerful and safest antiseptics of the phenol series, it has not superseded carbolic acid in surgery, as it was at one time thought it might, and still remains a very valuable agent in the treatment of many forms of cutaneous disease.

Five years ago I had the privilege of addressing this society on the subject of Naphthol in Dermatology, and since that time I have continued to employ it in many of the skin affections in which I had till then noted its good effects, and have extended its use to some other conditions. Thus in the parasitic diseases, notably scabies, its action is uniformly favorable, and is increased when combined with sulphur. In pruritic affections, and in pruritis without lesions, it often cures the itching when other remedies have failed. In institution practice I place reliance on an antipruritic oil containing ten per cent. of naphthol. Occasional failures occur, as with any other itch-allaying remedy.

In diseases of the scalp, pityriasis, seborrhœa, seborrhœal eczema, impetiginous eczema, pediculosis, psoriasis, alopecia, and alopecia areata, I may say naphthol has given me as general satisfaction as any other single remedy. I now, more than formerly, combine the bichloride of mercury with it in several of these conditions, and with increased effect. If alopecia is due to any of these diseases, then naphthol tends to check the loss of hair by making the scalp healthy. The stimulating effect upon the healthy scalp has, it seems to me, prevented further loss of hair in many cases, and in some instances has undoubtedly brought about an increased growth. I believe, too, it hastens the natural return of the hair in syphilitic alopecia, as well as that following erysipelas, typhoid and other debilitating forms of sickness. In women especially has renewed growth of hair been at times very prompt and satisfactory in the ordinary forms of alopecia. In alopecia areata I have had several recoveries after a course of treatment both surprising to me and gratifying to the patient by reason of its brevity. In such obstinate diseases as ichthyosis and prurigo of Hebra the results have been very satisfactory; while in milder affections, such as acne, chromophytosis, ringworm, sycosis, etc., naphthol has its use.

A good prescription is:

℞ Naphthol beta	gr. xv.
Sulph. prec	℈ j to ℈ ij.
Lanoline	ʒ iij.
Cosmoline	ad ℥ j.

M.

For scabies the proportion of naphthol can be increased to ten per cent.

The following is the prescription which I have mostly used for the scalp:

℞ Naphthol beta	ʒ j to ʒ ij
Ol. ricini	℥ ss.
Ol. amygdal amar.	♏ j.
Ol. aurantii flor.	♏ iv.
Spt. vini. rect.	℥ ijss.

M.—To be applied to scalp once daily.

In the full strength I have once seen an eczema produced in a scalp the seat of pityriasis.

A practical point in regard to the way ointments should be made: I often see ointments dispensed with the naphthol crystals simply suspended in the base, and this may account for many failures put down to the discredit of the drug. Now, while but slightly soluble in water, it is freely so in alcohol, ether, chloroform, benzole, etc., and it should be ordered to be first dissolved in one of these before mixing with the base, or the druggist will probably neglect it. Perhaps as good a plan as any is that suggested by Hardy, of dissolving in ether, then evaporating the ether with heat before adding the fatty base. I have made extensive use of naphthol soap (two and a half per cent.), with or without sulphur, in parasitic diseases, acne, dry scaly conditions, pityriasis rosea and pruritus with often decided benefit. Iodo-naphthol, betol, benzoate of naphthol and camphorated naphthol are recently introduced modifications which have not yet come much into use, but the last mentioned compound has already some reputation as an interstitial injection in tuberculous adenitis.

Pyoktanin I have not found of much value in skin cases. In sixty cases of inoperable cancer, in which I have tried it both as a local dressing and in interstitial injection, I have found it to give much relief to the patient, and in some instances has very markedly decreased the size of the growth. Internally from three to five grains of methyl-violet daily have seemed to produce little effect, but incidentally I found it very beneficial in cystitis.

Locally, in gonorrhœa, it seemed to do some good, but internally in one case its action was nil. Thirty-eight cases were treated with injections, gr. ss. to ℥ j.; 12 only remained under observation, 8 were cured, 3 improved and 1 not improved. The average time of treatment for the 8 cases was four and five-eighths days.

Cases of poisoning from methyl-blue have not been reported, but at the last meeting of the Dermatological Society, Dr. R. W. Taylor, who had ordered three grain capsules for a case of cystitis, reported that the man had taken by mistake two capsules at a dose, and as a result presented himself with a severe dermatitis of the face and hands.

Creoline, in strength of two per cent. or less in solution or ointment, gives good results in some forms of eczema. It appears to be a powerful antiseptic, but its odor is unfavorable to its use in private.—*Chas. W. Allen, M.D., in Med. Journal.*

A Corrective for Cod-liver Oil.—The following corrective is recommended in the *Gazzetta degli Ospitali*, No. 73, 1892, as disguising the taste of cod-liver oil:

℞ Essence of wintergreen } aa 4 parts.
Essence of sassafras, }
Oil of orange flower, . 2 "

Add three to four drops of this to one hundred grammes of the oil.

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CLINICAL RECORDS.

POISONING BY STRYCHNINE: RECOVERY.

By A. Wallace, M.D., James McRae, M.D.

On June 11th we were summoned in great haste to W. M., aged 65, scavenger, who had, it was alleged, attempted suicide by poisoning.

On arriving at the man's bedside we found that some seven or ten minutes previously he had swallowed a large quantity of strychnine. The following treatment was at once instituted: Apomorphine $\frac{1}{5}$ gr., was given hypodermically; six tumblers of hot water, with three tablespoonfuls of mustard and three tablespoonfuls of salt, were administered by the mouth for the purpose of producing vomiting, and as a preparation for the stomach pump, which was thereafter employed for more than an hour to evacuate and recharge the stomach repeatedly; as antidotes, 3 ounces of tannic acid were administered by the mouth at an early stage and after an interval evacuated to a large extent from the stomach by the pump; finally a large dose of bromide of potassium and 30 grains of chloral hydrate were given and strict quiet and absence of light and movement enjoined.

Twitchings and jerkings of the muscles of the limbs, and tetanic spasms of the muscles of the lower jaws, with violent contractions of the œsophagus, were the most noticeable symptoms. The effect of the emetics was very prompt, extremely violent, emesis occurring alongside the œsophageal catheter almost immediately after the introduction of the tube into the stomach. The man was busy at his work four days after his misadventure. His escape is no doubt largely attributable to the thorough evacuation of the stomach effected by the apomorphine, and to the fact that not more than ten minutes elapsed after the strychnine gained access to the stomach (which was full of food) before medical treatment was initiated.

While the quantity of the poison absorbed must have been undoubtedly insignificant, yet there is incontestable proof in our hands that the man swallowed exactly 20 grains of pure sulphate of strychnine.

This case has been published because, so far as can be gathered from the books of authorities on poisoning, it is unique. No instance, so far as we are aware, has formerly been recorded of recovery after the appearance of characteristic symptoms where such a huge dose of strychnine has been taken.—*British Med. Jour.*

Case I.—*Extensive Laceration of the Urinary Bladder; Laparotomy and Suture of Rent; Death from Peritonitis.*—C. E——, aged 33, on the evening of Jan. 14, 1892, in rough horse play with others with whom he had been drinking, was butted sharply in the abdomen. He at once felt great pain, and he was shortly after this brought to the hospital, at 9 P.M. He had, he said, passed urine two hours previously. On reception into Founder ward, the house surgeon noticed that he had an anxious expression, coldness of surface, a small, weak, slow pulse. He complained of severe pain in the lower part of the abdomen and of an urgent desire to micturate. The front of the abdomen was everywhere resonant. A catheter was passed without difficulty and some urine (roughly judged by the ward sister to be six or eight ounces), very slightly tinged with blood, was drawn off. On withdrawing the catheter a small blood clot was noticed entangled in its eye. At six o'clock on the following morning, there being again an urgent wish to micturate, the house surgeon again used the catheter and drew off nearly as much urine as on the preceding evening; it was still slightly blood-tinged. At 10 A.M. the pulse was 126 and the temperature 99.7°. At the midday visit, when he was first seen by Mr. Hulke, the symptoms of great shock had passed off. He complained of some pain over the pubes, where there was found a central dullness suggestive of a full bladder. With a catheter twenty-two ounces of urine, very slightly blood-tinged, were drawn off, after which the dull area was found resonant. When in the bladder the catheter was gently used as a sound for the detection of a rent in the viscus, and with a negative result. The accumulation of so large a quantity of urine apparently in the bladder seemed incompatible with the supposition of a complete rent involving its peritoneal coat and allowing the efflux of urine from the cavity of the bladder into the peritoneal sac; and to justify the diagnosis made by the admitting officer and house surgeon of shock from severe blow on the abdomen, with perhaps bruising and possibly partial laceration of the bladder, or a slight laceration of that part of it uncovered by peritoneum, a close watch was kept for any sign of extravasation into the pelvic cellular tissue. In the early evening increased pain in the abdomen and some tenderness and vomiting supervened. This was attributed to the supervention of peritonitis. Small doses of morphia were given hypodermically, and at twelve midnight leeches were put on. This was followed by ease and apparent improvement. He took and retained liquid nourishment.

16th.—10.30 A.M.: Temperature 100°; easier. In the evening vomiting returned, and he had more pain in the abdomen, which had become distended; urine drawn off is turbid and offensive; cystitis was present.

17th.—Vomiting; much abdominal pain and great distention. An exploratory laparotomy, which had been considered and previously thought unwarranted, was decided on. The abdomen was opened—after passing the catheter and withdrawing three ounces of offensive, bloody urine—by an incision three inches long, just above the pubis and afterward extended nearly to the umbilicus. A large extravasation of blood in the subperitoneal cellular tissue was found behind the rectus muscle. On dividing the peritoneum several ounces of grumous bloody fluid escaped. At first only coils of highly congested small intestine, coated and agglutinated by recent exudation, were apparent, but on displacing these gently upward much highly offensive puriform fluid welled up from the situation of the urinary bladder, and when this had been sponged out, a rent, nearly sagittal in direction, about two inches and a half long in the posterior wall of the bladder, was brought into view. Its edges were swollen, soft and stained with infiltrated blood. The rent was closed with a double row of closely placed sutures, the deeper series including all the tissues down to the mucosa and the superficial series, the peritoneum, with, perhaps, a thin plane of muscular tissue. The bladder was then injected with a watery solution of boric acid and proved water tight. The peritoneum was flushed out and cleaned. The abdominal wound was sutured in the usual manner and the bladder was kept drained by a full-sized soft red rubber catheter. For two hours after the patient was put back in bed vomiting ceased, but it soon returned. The peritonitis ran a rapidly fatal course, and death occurred next morning (the 18th) at 6 o'clock. At the necropsy the sutured rent in the bladder was found still water tight, no leakage occurring under considerable pressure. The pathological appearances observed were those of an intense, widely diffused peritonitis, which had evidently its focus in the vesical injury.—*Mr. Hulke, in the Lancet.*

SHEFFIELD PUBLIC HOSPITAL AND DISPENSARY.

Five Cases of Intravenous Injection of Saline Fluid for Hæmorrhage and Collapse (*Under the care of Mr. R. J. Pye-Smith*).—The following cases, all of them of extreme gravity, have recently been treated at the Sheffield Public Hospital and Dispensary by a method which deserves to have more attention called to it. In the *Lancet* of Sept. 12, 1891, Mr. Arbuthnot Lane related a remarkable case in which he had saved the life of a child moribund from hæmorrhage by the intravenous injection of three pints and a half of saline fluid. Although the intravenous injection of watery fluid is as old as transfusion of blood, having been practiced by Sir Christopher Wren in 1656, and being mentioned by Libavius in 1615, it has not often been used in such large quantities as those employed by Mr. Lane, except in cases of cholera, in which disease it was very successfully employed in doses up to four pints by Dr. Little at the London Hospital in 1848–49, and again by Mr. L. S. Little in 1866–67. The quantity of fluid used is, however, one of the most essential points in the intravenous injection of saline fluid. However valuable and necessary the red corpuscles and the nutritive constituents of the blood may be, it is not their diminution that gives rise to the immediate danger in cases of acute hæmorrhage. The real cause of death is a mechanical one, and consists in the loss of volume in the circulating fluid, which must, within certain limits, be proportional to the capacity of the vascular system. These limits are practically defined by the action of the vaso-motor apparatus, which, within them, automatically regulates the tension throughout the arterial system; but as soon as the limit is overreached in the way of depletion, the regulating power which adapts the tension of the vessels to their contents ceases, the toneless arteries then fail in their share in the propulsion of the blood, and—the capillaries, the veins and the heart being each affected in its own way—the circulation flags, and ultimately ceases. This fatal condition is reached when the quantity of blood is suddenly reduced to between three-quarters and half the normal or actually present amount in the body, and therefore long before death would have resulted from the diminished quantity of red corpuscles or from loss of nutritive material in the blood. It is not the composition of the blood but its bulk that is at fault, and the result is not oxygen starvation or tissue starvation, but failure of circulation. The rational way to meet this emergency is the intra-vascular injection of a sufficient quantity of any fluid not injurious to the blood or to any of the tissues of the body. Such a fluid we have ready to hand in "normal saline solution"—*i.e.*, ¾ per cent. aqueous solution of sodium chloride. The fluid is prepared by dissolving clean common table salt in clear, recently boiled water in the proportion of a drachm to the pint. It is injected into any convenient vein, at the rate of a pint in ten minutes, at blood heat, and in quantities sufficient to restore fullness to the pulse or to equal the amount of blood lost; and as in cases of death from sudden hæmorrhage the amount lost is usually from three to four pints, that should probably be the quantity employed. The apparatus Mr. Pye-Smith has employed for injecting has been, except in the first case, a simple glass syringe, as recommended by Mr. Lane, to the nozzle of which a T-shaped piece of tubing has been attached, the other arms of which were connected respectively by means of india-rubber tubing, with the cannula in the vein and the saline solution in a jug. With the help of an assistant to compress the two india-rubber tubes alternately, it is quite easy to inject continuously with such an apparatus without danger of injecting air into the vein.

CASE 1.—*Gunshot wound of leg; hæmorrhage; collapse; injection of three pints of saline fluid; amputation of leg; recovery.*—H. W——, a carter, aged twenty-six, was admitted on Sept. 25, 1891. He was accidentally shot in the left leg by the discharge of a fowling-piece at a distance of two or three yards, and sustained a severe lacerated wound, with compound comminuted fracture of tibia and fibula. He bled profusely for half an hour before being got to a house, where a handkerchief bandage was tightly applied to the thigh by a priest, and he was sent in a cart to the hospital, a distance of twelve miles. He arrived about three hours after the accident, and was admitted under the care of Dr. Keeling, in whose absence and that of Mr. Thorpe, Mr. Pye-Smith was called to see the patient. He found him much blanched and collapsed with small, weak, and frequent pulse and cold extremities. The man was restless, and complained of pain and thirst. It was evident that the leg required amputation, but the patient seemed quite unfit to undergo such an operation, and Mr. Pye-Smith determined to try the injection of saline fluid before submitting him to it. Meanwhile, hot water bottles were applied to the body, and he was ordered a drachm of brandy with five minims of laudanum every half hour in an ounce of hot water. Ether having been administered, and the thigh freed from bandages, Mr. Pye-Smith cut down on the internal saphenous vein below the knee at the level of the line for the proposed amputation flap. No blood flowed from either end of the divided vein, and it was not tied. A pint and a half of saline solution was slowly injected, with obvious improvement in the pulse, which had before become so feeble as to be scarcely perceptible at times. An elastic bandage was now applied to the thigh, and the amputation, two inches below the knee, was proceeded with; but when completed, although there had been scarcely any further loss of blood, the patient's condition was so alarming that the vein was again exposed by slitting up the skin over it, as the flaps had already been stitched together and the injection repeated. Another pint and a half of saline fluid was injected, this time with still more obvious effect, for the pulse became most markedly fuller and less rapid, while the color and fullness of the face were distinctly increased. The patient soon rallied, took liquid nourishment readily, and in a few hours seemed out of immediate danger. The wound healed well, and was quite closed in a month. The man is now in good health, and by no means anæmic.

CASE 2.—*Fractured ribs and internal hæmorrhage from a fall of thirty feet; collapse; injection of twelve ounces of saline fluid; death; necropsy.*—H. H——, a joiner aged thirty-two, was admitted on Dec. 15, 1891. While at work on the scaffolding of a new building he was struck by the chain of a crane, and fell a distance of thirty feet on to his left side. He was at once conveyed to the hospital, where he was seen by the house-surgeon, Dr. G. Wilkinson, half an hour after the accident. He was then in a state of extreme collapse, blanched and cold, but conscious, and complaining of pain in the left side. The pulse was very feeble, 120. The pupils were dilated and insensitive to ordinary daylight. The skin was covered with cold sweat. There was much pain in the back on movement. Crepitus was felt over several of the lower ribs on the left side, and there was a hæmatoma on the left buttock. On drawing off the urine it was found to contain a trace of blood. The patient stated that he had micturated shortly before the accident. He was put to bed with hot-water bottles, and brandy and opium were administered, and ergotine was injected subcutaneously; but in the course of an hour he was evidently worse and almost pulseless. He was quite unfit for abdominal exploration, and, as a forlorn hope, saline fluid was injected into the cephalic vein at the right elbow. By the time that twelve ounces had been slowly injected the breathing had become so feeble that artificial respiration was resorted to, with the effect of somewhat restoring the pulse for a short time. Ether was injected subcutaneously and brandy was added to the saline fluid for further intravenous injection, but respiration and circulation failed before any more could be used, and in spite of continued artificial respiration, with inversion of the body and faradization, he died three hours and a half after the accident. At the post-mortem examination it was found that the lowermost five ribs on the left side were fractured and that there was a rent in the center of the left half of the diaphragm, through which the spleen and the greater part of the stomach had escaped into the left pleura. The spleen was quite pulped, and there were upward of two pints of blood in the left pleural cavity, beside a considerable quantity in the posterior walls of the abdomen. The stomach was a good deal bruised, and the left kidney somewhat so. The bladder was not injured. The heart was contracted, and its ventricles were empty.

Case 3.—*Burnt wound of popliteal space; hæmorrhage; collapse; injection of sixteen ounces of saline fluid; amputation of thigh; recovery.*—J. O——, a steel roller, aged eighteen, was admitted on Dec. 15, 1891. He was at work in a steel-rolling mill when a piece of hot steel ran against him, cutting and burning the back and left thigh down to the bone at the top of the popliteal space. He bled a good deal at the time, and, although a string was tied tightly round the thigh, he lost some more blood while being conveyed to the hospital. On admission an elastic tourniquet was applied, and it was found that the popliteal vessels and nerves were severed, as well as the biceps and parts of other muscles. Over a pint of blood-clot was found in the trousers. He was blanched and restless, and and his extremities were cold. The pulse was small and feeble, 84. He was put to bed with hot-water bottles; an enema containing brandy was administered, and brandy and opium were given by the mouth. He would not at first consent to amputation, but within an hour of admission, his pain being so great, his friends prevailed upon him to do so, and ether was then at once administered. His condition was such that Mr. Pye-Smith thought it best to inject some saline fluid before amputating. Sixteen ounces were accordingly injected into the right cephalic vein at the elbow, with the effect of raising the frequency of the pulse to 120, and with such marked improvement in its volume that he then desisted, and proceeded to amputate the thigh by a single antero-internal flap, by which means he was able to divide the bone within an inch of the level of the wound and just above the apex of the popliteal space. The patient was pale for some days after the operation, but under the influence of iron and nourishment he soon began to regain his color, and has made a very good recovery.

Case 4.—*Railway crush of both legs; hæmorrhage collapse; double amputation* (*knee and thigh*); *injection of four pints of saline fluid; recovery.*—C. R.——, a shunter, aged thirty-nine, was admitted on Jan. 2, 1892. He was engaged coupling two empty railway trucks as they were slowly moving, when he slipped, and one of them went over both his legs just below the knees. Elastic tourniquets were quickly applied by some of the Midland Railway officials, but not till he had lost a good deal of blood, and he was sent to the hospital. When admitted he was much collapsed and moaning with pain, but it was not possible to get from him any account of the accident or even to obtain any response when he was told that his legs must be amputated. The right leg was found to be severed, except for a little skin in the lower fourth, and was crushed to within two inches of the knee-joint. The left leg was nearly severed immediately below the knee, and the skin all round the knee was loose. His wife's consent to amputation having been obtained, ether was administered, and both legs were amputated, the right by lateral flaps through the knee-joint, leaving the semilunar cartilages as well as the patella; the left, by anterior and posterior flaps just above the condyles, the patella being removed. Very little blood was lost, but his arteries felt very empty. The pulse was irregular, soft and compressible, 132. His face was very pale. It was not considered advisable to leave him without injecting saline fluid, which was in readiness; and, as he lay quiet after the effect of the anæsthetic, it was easy to inject the fluid into the internal saphenous vein at the angle of the amputation wound in the left thigh, before applying the dressings. Four pints were steadily injected in the course of about half an hour. The effect on his pulse was marked; it fell in frequency from 132 to 104 and became much fuller, but he might probably have received still more with advantage. The face became a little less pale, but the improvement in that respect was not great. The pulse rose again to 120 before he was removed to bed, but he rallied well, and, though weak and very anæmic for a fortnight, he is now making a good, though slow recovery. Unfortunately, a great part of the skin flaps of the left amputation wound sloughed and an inch or more of the femur will probably have soon to be removed. There was also some sloughing in the right limb, but the tissues are now closing satisfactorily, and promise to make a good stump.

CASE 5. *Burnt wound of axilla; hæmorrhage; ligature of axillary artery; gangrene; secondary hæmorrhage; amputation at shoulder; syncope; injection of four pints of saline fluid; death.*—M. T. K——, a collier, aged twenty-four, was admitted on Dec. 31, 1891. In running between a fellow workman and the fire he received an accidental blow from a pointed piece of hot steel, which penetrated the left axilla from the front. Blood spurted out of the wound, but pressure controlled the hæmorrhage till medical assistance was obtained. Mr. Pye-Smith saw the case at Wales Wood Colliery in consultation with Mr. G. H. West Jones, of Eckington, five hours after the accident occurred. There was a small wound about 2 inches above the anterior axillary fold on the left side and the axilla was distended, but the radial pulse on that side was as good as on the other (88 per minute), and sensation in the limb was perfect. With the assistance of Mr. West Jones and of Mr. J. Court, of Stavely, Dr. A. Court giving chloroform, Mr. Pye-Smith opened up the axilla from below and found it full of blood clot. The burnt wound went directly backward, through the pectoralis major and penetrated to the vertebral border of the scapula. A large artery (probably the subscapular) was found bleeding, and was secured deep in the axilla, as well as one or two smaller vessels, and it was hoped they would prove to be all, as the axillary vessels and nerves appeared to be uninjured; but on moving the arm blood rushed from the axillary artery, and it was found that there was a slit on its upper aspect in the third part of its course. It was tied and the wound then closed, drainage tubes being inserted, and, as the man's home was two miles from the colliery, he was then sent in an ambulance to the hospital, a distance of about ten miles. Next day there was lack of sensation in the fingers, and on the following day, as gangrene appeared to be commencing, a consultation was held to decide whether to amputate at once at the shoulder or to wait for demarcation. It was decided to wait, in the hope of being able to amputate at the elbow later on, sensation still being good to some inches below that joint. In the course of a week the gangrene had greatly advanced to just below the elbow, and now a gangrenous patch showed itself on the inner aspect of the upper arm. The patient became delirious and the semi-purulent discharge from the wound was fetid. He took nourishment pretty well, but the pulse and temperature ranged high, and he looked very pale, thin and ill. On the evening of Jan. 12 (twelve days after the accident) secondary hæmorrhage occurred, and he lost several ounces of blood. It was evident that amputation must be at once performed and the bleeding vessel secured. Ether was accordingly administered and it was found that the gangrene now extended to the middle of the arm. Amputation at the shoulder was effected by outer and inner flaps. No large vessels bled, the axillary artery being plugged with clot and the slit in it being clearly visible. On clearing out the suppurating cavity in the axilla, it was seen that the secondary hæmorrhage was from a hole deep down on the vertebral border of the scapula, so deep that the only way to secure the vessel was by leaving a pair of long-pressure forceps on it. It was apparently the posterior scapular artery which had ulcerated on the separation of an eschar caused by the burn. While this vessel was being secured, the patient's pulse entirely failed, and two pints of saline fluid were at once injected into his right basilic vein, with marked improvement in his aspect, and a return of the radial pulse, which became full and bounding. In a few minutes, however, the pulse again began to disappear and was soon imperceptible at the wrist. Ether was injected under the skin and a brandy enema given, and then the saline injection was resumed. When half a pint had been used the pulse again returned, and continued to improve while the remainder of the second quantity of two pints was being injected; but it never became as strong as it did during the previous injection. When the injecting was finished the respiration was very feeble and shallow, and the pulse soon became imperceptible even at the groin, and breathing ceased. Artificial respiration was now resorted to, combined with inversion of the body, and faradaism was applied to the neck and præcordium, but none of these means availed to restore either circulation or respiration, though persisted in for half an hour.

A CASE OF CEREBRAL TUMOR, ILLUSTRATING THE DIFFICULTIES OF CEREBRAL LOCALIZATION.—(*By E. H. Bennett, M.D., F. R. C. S. I., Professor of Surgery in the University of Dublin.*)—The patient came under my observation in September, 1890; he had been ailing for some time before this date, and had been advised in the early part of July to arrange his affairs. I can give no details of the case before I saw him myself.

He was a tall, gaunt man, aged forty-five. He was helped into my study by his brother, who had a good deal of trouble in getting him from the train to a cab, and from the cab into my house. With very little support—the grasp of a finger—he could stand alone; but his efforts to walk were ill co-ordinated, and he had to be held from behind under the arms in order to walk. He had a fatuous face, with exophthalmos, and an open mouth, with a hanging lower lip. His speech was slow and slightly inarticulate, but correct. He had loss of memory, but was free from any delirium or fever, and was most biddable. He had no definite paralysis. After admission to hospital his symptoms became more marked. At first he could stand with the support of a finger. After a little time he had to be held beneath the arms or he would fall, always to the right; put sitting in a chair, he would fall out of it before long to the right; he became more feeble mentally; his memory failed more completely; although seeing me every day, he failed to recollect my name; he wandered about his farming and his poaching.

On October 16 Mr. Story examined his eyes for me, and reported that there was no optic neuritis; that the pupils acted normally; that the palpebral fissure was abnormally wide, and that winking was infrequent and incomplete. The upper lids did not follow the downward motions of the globes with normal accuracy; also distinct anæsthesia—that is, partial loss of sensation and reflex action of the conjunctiva—existed.

At this time, and from the very first, the man had difficulty in swallowing, caused, as far as one could judge, by defect in the power to start the act of pharyngeal deglutition. He would keep food in his mouth for a great length of time, and it required an effort, during which he often choked, before he could get the food past the fauces. This and the dullness of the ocular reflex varied greatly; some days he would be nearly normal, and then both failures returned, rather increased after each remission. His tendon reflexes were normal at first; as the case went on, the investigation of their condition was prevented by his downward progress. He got phlebitis of the superficial veins of the left leg, with a rise of temperature on October 23 to 101.5°. The limb became œdematous, and he no longer could be placed standing, or even sitting on the edge of the bed.

On November 6 his faculties had greatly failed, yet he recognized his brother; but next day he recollected nothing of his visit.

On November 13 the veins of the right leg became obstructed, and the limb œdematous.

His urine was throughout normal, and his bowels constipated. Toward the end of his life he passed under him both urine and fæces. He had some five or six attacks of convulsion, in which his left lower limb twitched, his eyes turned up, and his breathing was labored.

He had pain in his head, which he referred to the occipital region, but he made no great complaint of it, and never could indicate any definite site for it.

His difficulty of swallowing increased, and I thought that some day this would bring about his death.

On the 1st of December his temperature, which had fallen after the rises which attended the attacks of phlebitis, rose to 101°; on December 2 it reached 102°; on December 3, 104°; the Cheyne-Stokes' respiration coming on, he so died. He never had any impairment of power in his arms; he could move his legs about in bed until their condition of œdema rendered the motions difficult.

I failed to localize the seat of the disease of his brain. Nor could any of those who saw and examined the man suggest a site or form of disease; only one could say that progressive organic disease was present.

I could obtain a post-mortem examination of the cranium only, and of his scrotum, which held a simple vaginal hydrocele.

The examination of the cranium disclosed the fact that the cause of the disease was a tumor of the brain substance, which involved the convoluted surface of the right cerebral hemisphere. The tumor was roughly hemispherical in shape, the base opposed to the dura mater and bone, its size about half that of a Tangerine orange; the dura mater was adherent to the surface, and all the parts of the brain showed marked signs of compression, caused by the presence of the tumor. The tumor lay directly over the fissure of Silvius, and exhibited on the brain, stripped of its membranes, a defined and nearly circular area 75 mm. in its horizontal diameter, 70 mm. in its vertical diameter.

It obliterated the lower two-thirds of the fissure of Rolando, and involved the lower half of the ascending parietal convolution, with the exception of 10 mm. of its lower end. The whole of the ascending frontal convolution, with the exception of the 25 mm. above, and 10 mm. below, was lost in the tumor.

The superior frontal convolution was not involved, but it was compressed in its hinder part. The superior frontal sulcus formed a natural boundary of the tumor.

The middle frontal convolution in its posterior half was completely obliterated, and the præcentralis inferior sulcus was gone.

Of the other parts of the inferior frontal convolution the "cap" of Broca, or the pars triangularis (*i.e.*, the portion between the ascending and anterior horizontal limbs of the fissure of Sylvius), was entire; the orbital part was entire; the pars basilaris, between the ascending limb of the Sylvian fissure and the præcentralis, was slightly involved in its upper and back part, and was compressed throughout.

In this detail of the parts involved, those familiar with the admitted sites of the centers of volition governing the left upper limb will see that these, and those of many other parts of the left side of the body, are destroyed; but never during life was there any paralysis of the limbs. How are such facts to be reconciled with our present views of cerebral localization?

I have not as yet made the histological examination of the tumor, as the specimen has been prepared with a view to the demonstration of the more important question of its size and relations to the motor area of the cerebral hemisphere. The tumor is probably a sarcoma; it has undoubtedly arisen in the structure of the pia mater and has compressed the convoluted surface.

N. B.—The microscopic examination has established the diagnosis of the tumor as a sarcoma since its presentation to the Pathological Section.—*The Dublin Journal of Medical Science*, November.

ABSTRACTS.

LECTURES ON GOITRE : LECTURE II.—Delivered by James Berry, at the Royal College of Surgeons of England (*Brit. Med. Jour.*).

This lecture deals with the treatment of parenchymatous goître, and the subject of injection is first discussed. Reference is made to a series of cases in which surgeons have lost healthy patients from the injection of iodine into a goître, death occurring either on the operating table or within a few hours after the injections. "These cases," says the lecturer, "show pretty clearly that injection of iodine is an operation by no means devoid of danger, even when carefully performed, and when only a small quantity (two minims of the tincture) is employed."

The introduction of a seton is, in the lecturer's opinion, too dangerous to warrant its recommendation for any kind of goître. A large vessel may be transfixed, or inflammation, cervical cellulitis and pyæmia may be induced.

Ligature of the thyroid arteries has been beneficially performed in early cases of parenchymatous enlargement. The lecturer remarks upon the difficulty of ligaturing the inferior arteries, on account of their deep situation and close proximity to the sympathetic nerve.

Regarding division of the thyroid isthmus, the lecturer's conclusions are: "That division of the thyroid isthmus may relieve dyspnœa mechanically, by allowing the two halves of the goître to separate, but that it more often does so by draining the gland of its colloid secretion. That the relief afforded may be permanent, but that frequently the goître reappears when the wound has healed, and the secretion is again pent up in the gland. That in many cases in which very urgent dyspnœa is present a mere division of the isthmus will not relieve the dyspnœa sufficiently quickly, and it is necessary to do some further operation, either tracheotomy, or, much better, removal of some considerable portion of the goître."

The lecturer next speaks of extirpation of a portion of the gland in cases of parenchymatous goîtres, or of those which are in the main parenchymatous and consist of a fairly uniform bilateral enlargement.

(1) Total extirpation is not now recommended on account of the grave after-results (cachexia strumipriva) which usually follow.

(2) Partial extirpation (*a*) of one lobe. The varieties of skin incisions are the vertical, the oblique, the angular or curved and the transverse.

The vertical incision is most suitable for small goitres situated near the middle of the neck. The oblique is considered the best for nearly all cases. The lecturer proceeds to describe the *technique* of the operation and the after-treatment, for details of which reference should be made to the original papers. (*b*) Mikulicz's resection. The object of this is to remove the chief part of one or both lateral lobes, and to avoid all risk of wounding the recurrent laryngeal nerve. At the same time enough thyroid tissue is left behind to carry on the function of the gland. The method of performing this operation, and also Prof. Koch's modifications of it, are fully described by the lecturer. (*c*) Resection of the isthmus. The lecturer does not recommend this operation, for the reason already stated in speaking of its division. HUNTER MACKENZIE.

LECTURES ON GOITRE; LECTURE III. BERRY, JAMES (London).—Delivered at the Royal College of Surgeons of England. In this lecture the different varieties of cystic goitre are briefly described, and their treatment, by simple tapping, by injection, and by drainage, discussed, and the dangers of each method described.

Intra-glandular enucleation (of cysts or of solid tumors) is next referred to in detail, and its indications, contra-indications and advantages enumerated. Following Kocher, he considers enucleation to be suitable in (1) cystic goitres, in which most of the tumor is formed by a cyst; (2) isolated large solid tumors which lie imbedded in comparatively healthy gland tissue. The cases not suitable for enucleation, according to Keser, are (1) cases of diffuse hypertrophy, in which the whole gland is uniformly enlarged; (2) malignant goitre (carcinoma and sarcoma; (3) goitre in which, besides one or more large nodules which appear to call for surgical treatment, numerous small nodules are disseminated throughout the gland. In such cases it is highly probable that, after removal of the larger tumor, the smaller ones would continue to grow; while to remove all by enucleation would be impossible.

Fibro-adenomatous goitre and malignant disease of the thyroid is next mentioned. In regard to the latter, the lecturer is of opinion that removal of the disease should very rarely be attempted, and that we should rest satisfied with tracheotomy.

Death has often occurred during the operation, generally from dyspnœa, hæmorrhage, or shock. It sometimes occurs at the very beginning of the operation, either just before or just after the first incision has been made. Other complications of thyroidectomy are then mentioned, including injuries to various arteries and veins, to the recurrent, laryngeal, sympathetic and vagus nerves, and to the trachea and pleura. The great importance of keeping the wound aseptic is insisted upon, and the frequently fatal results of suppuration in the wound are described.

Tetany and tetano-epilepsy are serious and not uncommon complications.

The lecturer refers to cachexia strumipriva, one of the most important remote results of thyroidectomy. He comes to the conclusion "that if the gland be completely removed there is a very great risk that cachexia strumipriva will supervene, although it is not absolutely certain that it will do so in all cases." It appears that cachexia strumipriva has in some cases followed partial removal. This is, however, of rare and temporary occurrence.

The lecturer concludes by referring to the effects of transplantation of normal thyroid tissue into the subjects of cachexia strumipriva and myxœdema, and he says that "the information that we have, although not very encouraging, is, on the whole, sufficient to warrant us in giving the operation a further trial before concluding definitely that it is a failure."

HUNTER MACKENZIE.

OPERATIVE TREATMENT OF TRAUMATIC CORTICAL EPILEPSY.—Benda (*Deutsche medicin. Wochenschr.*, September 3, 1891), before the Congress of German Surgeons, reported the case of a soldier, twenty years old, with no neurotic family history, who, a year and a half after a fall from a horse, attended with injury in the left parietal region, suddenly, while at work, lost consciousness. Subsequently there developed headache and pain, referred to the cicatrix of the previous wound; then apathy and weeping. These manifestations augmented in intensity, until finally syncopal and hysterical attacks occurred. Four months later, an epileptic seizure of several hours' duration took place, followed in the succeeding four days by four lesser seizures. Several days later, the paroxysms assumed a characteristic type, which they retained thenceforth. The attack began with tremor in the right foot, succeeded by clonic spasm in the right leg, tonic contraction of the right arm, and finally feebler contractions on the left side, and was followed by hemiparesis of the right side. Hysterical attacks alternated with the attacks described. Ultimately aphasia frequently became associated with the hemiparesis. Mental and physical failure progressed and permanent monoplegia of the right leg developed. Nearly two years after the accident, trephining was performed, the dura mater opened, and by means of the faradic current the center for the right leg localized. From this region an area of cerebral tissue, about as large as a dime and about one-tenth of an inch thick, was removed. The pial veins in the arm-center were ligated, the wound packed with iodoform-gauze and at the end of two days sutured and drained. The subsequent course was uninterruptedly favorable. After the operation, the right arm was paralyzed, the right leg to the knee paretic. Two weeks later, the palsy of the right arm suddenly disappeared. Nearly three months after the operation, an hysterical seizure occurred, induced by anger. Subsequently, however, there were no further indications of hysterical or epileptic attacks. Intelligence returned and mental occupation became possible. Slight motor weakness of the right arm, and a feeling of numbness at the right costal arch, the right knee and the ulnar side of the right ring-finger were the only abnormal clinical evidences that finally remained.

SPASMODIC WRY-NECK.—Noble Smith has published a pamphlet on this subject, in which he arrives at the following conclusions:

1. Neither drugs, local applications, nor other general methods are of any permanent use in the treatment of well-established spasmodic wry-neck.
2. Electricity has failed to do any permanent good except in some recent cases, which probably differed entirely in their nature from those referred to.
3. Nerve stretching, although successful in a few cases, cannot be depended upon as a certain remedy.
4. Section and ablation of a piece of the spinal accessory nerve is absolutely certain to remove all spasm from the muscles supplied by that nerve, and is very likely to remove spasms set up in other muscles, although other nerves are apparently involved.
5. The most certain and satisfactory plan of operation is section of the nerve upon the inner side of the sterno-mastoid before it enters the muscle.
6. When other muscles remain spasmodically affected, the spasms may be removed by section of the nerves supplying those muscles.
7. The operations of section of the spinal accessory nerve, and of the posterior roots of the cervical nerves are not followed by serious inconvenience to the patient from paralysis of the muscles.
8. There seems to be no risk of the reunion of the nerves and return of the spasms after operation.
9. It seems probable that other convulsive movements of the head may be remedied by section of nerves.—*Times and Register.*

THE TREATMENT OF EPILEPSY.—Huchard (*Rev. Gén. de Clin. et de Thér.*, 1892, No. 9) insists that in case the bromides fail in treatment of epilepsy it must be determined that the lack of success does not depend upon the mode of administration. For epileptics, the bromides must be looked upon as food; about thirty grains should be given three or four times daily. If the attacks occur at night, the largest dose should be given a short time in advance. If the disease has appeared late in life, especially if there is a history of syphilis, iodides should be conjoined with bromides. Should cutaneous eruptions appear, an intestinal antiseptic, such as naphthol or betol, may be administered. If, despite all precautions, the bromides are not well borne, borax may be tried. The agent must be free from all impurity. It is insoluble in alcohol, slightly soluble in water, and more soluble in glycerin. It sometimes gives rise to derangement of digestion, cutaneous eruptions, emaciation and conjunctivitis. If diarrhœa occur, bismuth salicylate may be given. Borax is said to be the more useful in symptomatic epilepsy, the bromides in neurotic epilepsy. Treatment with borax, is begun with daily doses of from seven and a half to fifteen grains, which are gradually increased to sixty, seventy-five, one hundred and twenty, and even one hundred and fifty grains. If large doses are not successful, the remedy should be withdrawn. If the attacks are controlled, the dose may be reduced to sixty grains. The remedy is given morning and night. Should the bromides and borax fail, amylene hydrate may be employed in doses of from ten to thirty grains three times daily.

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BOOK REVIEWS.

Essentials of Diagnoses, arranged in the form of Questions and Answers. Prepared especially for Students of Medicine. By Solomon Solis Cohen, M.D., Professor of Clinical Medicine and Applied Therapeutics in the Philadelphia Polyclinic; one of the Physicians to the Philadelphia Hospital, etc., and Augustus A. Eshner, instructor in Clinical Medicine in Jefferson College and in the Philadelphia Polyclinic, etc. With fifty-five illustrations and a frontispiece. Pp. 382. Price $1.50 net. Philadelphia: W. B. Saunders.

The arrangement of this neat volume would indicate that it emanates from teachers whose aim is to make it reliable and helpful and yet not too superficial. Its truly modern treatment of most subjects discussed places the book far in advance of any recent publication.

The preface distinctly disavows anything original or elaborate; it claims to be elementary in character, devoid of detail, and to represent but an outline of the subject, which must be filled from observation and further reading.

This is just what the students need in this day of great competition and rivalry in college and hospital honors.

Diagnoses must, as the authors say, be studied from patients, not from books. Even the best of books cannot direct the student what to look for at the bedside and warn him against errors. How far superior the Question Compends, of which the book is No. 17, are to the brief humdrum examination books, with which many of our older readers were familiar in their student days, can only be appreciated by glancing over the bright and interesting pages of this latest work from this enterprising publishing house.

A New Pronouncing Dictionary of Medicine, being a voluminous and exhaustive Hand-book of Medical and Scientific Terminology, and Phonetic Pronunciations, Accentuations, Etymology, etc., by John M. Keating, M.D., LL.D., Fellow of the College of Physicians, of Philadelphia, etc., and Henry Hamilton, author of "A New Translation of Virgil's Æneid into English Rhyme," and author of "Saunders' Medical Lexicon, etc., with the Collaboration of J. C. DeCosta, M.D., and Frederick A. Packard M.D.; with an appendix, etc. Price, cloth, 8vo, sheep, $6 net. Philadelphia: W. B. Saunders, 912 Walnut Street.

The absurd differences in pronunciation at present existing among medical men render this work timely and important. The authors have taken pains to consult the most eminent teachers of Latin in American Universities, whose opinions are almost unanimous that when we introduce into our language scientific words of foreign origin, we may adopt them as our own and naturalize them under the customary rules of pronunciation. In view of this fact it is to be regretted that the authors still hesitate to adopt as "hard and fast rules" the anglicized pronunciation. It is high time that we all should not be put to the pronouncing uncertainty which now renders us uncomfortable, and this stately volume will contribute much to this consummation.

The appendix is a mine of valuable information, to which the busy practitioner may turn for comfort in many perplexing questions that arise daily, and to answer which a large library and great expenditure of time would be required. As an illustration may be mentioned the "Localization of the Functions of the Segments of the Spinal Cord," by that brilliant neurologist Dr. M. Allen Starr, of New York, and the dose table and table of poisons and newer drugs, which appear to be gathered with care and are not simply a rehash of older works.

The mechanical execution of the work is guaranteed by the imprint which it bears.

A Treatise on Diseases of the Nose and Throat. In two volumes. By Franck Huntington Bosworth, A.M., M.D., Professor of Diseases of the Throat in Bellevue Hospital Medical College, New York. Consulting Laryngologist to the Presbyterian Hospital, etc. Vol. II. Diseases of the Throat, with three colored plates and 125 new cuts. Pp. 832. New York: William Wood Company. 1892.

The enormous experience gathered by the author in his chosen field is mirrored in this stately volume. The anatomy and physiology of the Fauces, a term by the way which the author has dignified by revival from comparative obscurity, are well brought out on a basis for diagnosis and therapeutics.

The consideration of the diseases of the throat is encyclopædic in its completeness. Nothing seems to have been omitted that can lend light to any search after knowledge.

There are many points in the work from which the consensus of professional opinion may depart, but they are in the non-essentials of the subjects discussed. The author's well-known common-sense methods are everywhere discernible. He has given us a book of which we may well be proud on account of its completeness. The publishers have enhanced its value by perfection of mechanical execution.

As a specimen of American bookmaking, the work of Bosworth must stand preëminent.

Abstracts of the Minutes of the Meeting of the State Board of Health of the State of Illinois. Held in the City of Chicago July 27, 1892.

An Epitomized Review of the Principal and Practice of Maritime Sanitation. By Joseph Holt, M.D.

Report on Abdominal and Pelvic Surgery, including thirty-two successful cases of Laparotomy. By William H. Warthen, M.D., of Louisville, Ky.

Should not Oculists be More Careful in Prescribing Colored Glasses. By W. L. Bullard, M.D., Columbus, Ga.

Bromide of Ethyl as an Anæsthetic. By E. H. Kuykendall, M.D., Chattanooga, Tenn.

The Lacerated Cervix. By W. G. Bogert, M.D., Tenn.

Note on the Hysterical Concomitants of Organic Nervous Diseases. By C. H. Hughes, M.D., St. Louis.

Evolution from a Scientific Standpoint. By J. Pope Stewart, M.D., of Ala.

THE TREATMENT OF TUBERCULOSIS WITH TUBERCULOCIDIN. By Dr. E. Klebs, of Zurich.

PROCEEDINGS OF THE THIRD ANNUAL MEETING OF THE TRI-STATE MEDICAL SOCIETY OF ALABAMA, GEORGIA AND TENNESSEE, held in Chattanooga, Tenn., Oct. 27, 28 and 29.

McINTOSH BATTERY AND OPTICAL CO. ELECTRO-THERAPEUTICAL CATALOGUE.

SALOPHEN IN ACUTE RHEUMATISM. By William H. Flint M.D.

MEDICAL AND DENTAL DEPARTMENTS OF THE NATIONAL UNIVERSITY, WASHINGTON, D. C.

CIRCULAR NO. 34. STATE BOARD OF HEALTH. THE TREATMENT OF THE APPARENTLY DROWNED OR SUFFOCATED.

CIRCULAR NO. 35. STATE BOARD OF HEALTH ON THE PREVENTION OF BLINDNESS.

CIRCULAR NO. 36. STATE BOARD OF HEALTH SANITARY PROTECTIVE ASSOCIATION.

UNIVERSITY OF MICHIGAN: DEPARTMENT OF MEDICINE AND SURGERY. ANNUAL ANNOUNCEMENT, 1892–93.

TWO CASES OF REMOVAL OF LAMINÆ. By DeForrest Williard, M.D.

OPERATIVE TREATMENT OF SPINAL CARIES. By DeForrest Williard, M.D., Philadelphia.

OPERATIVE TREATMENT OF THE DEFORMITIES RESULTING FROM INFANTILE SPINAL AND CEREBRAL SPASTIC PARALYSES. By DeForrest Williard, M.D., Ph.D.

FIFTY-SECOND ANNUAL ANNOUNCEMENT OF THE MISSOURI MEDICAL COLLEGE SESSION 1892–93 AND CATALOGUE OF SESSION 1891–92.

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MISCELLANEOUS.

PACHYDERMIA VERRUCOSA LARYNGIS.—Meyer (*Berlin. klin. Wochenschr.* No. 19, 1892, p. 454) has reported two cases of pachydermia verrucosa laryngis successfully treated by gradual excision. One was that of a man, fifty-three years old, who for two years had been hoarse, and for three months had suffered with marked and progressively increasing dyspnœa. The right half of the larynx was found occupied by a chalky-white tumor, of cauliflower appearance and hard consistence, extending beyond the median line and obstructing the view of the deeper parts of the larynx. The growth apparently originated from the ventricle. There was neither history nor evidence of syphilis or of tuberculosis. The nutrition was maintained. From the fetor of the breath, from the size, appearance, and origin of the tumor, from the age of the patient, a diagnosis of carcinoma was reached. Examination of a bit of tissue removed failed, however, to disclose the histologic structure of carcinoma, and the removal of the growth by the natural passages was decided upon. This was accomplished piecemeal in ten sittings. A small growth recurred; this was removed; the patient thereafter remained free. Histologically it was found that beneath a thick layer of epithelium was a connective-tissue stroma, sending papillary processes toward the surface; between these dipped epithelial processes; the lowest layer of epithelium consisted of fairly high cells, presenting here and there indications of division; toward the surface the cells are flatter, the uppermost layers being constituted of horny pavement epithelium. In the second case in a man twenty-six years old, the symptoms had existed for eight years. The galvano-cautery had been employed with excellent results. The patient presented atrophic rhino-pharyngitis. The posterior wall of the larynx presented a hemispherical, grayish-white thickening, projecting for a distance of about a quarter of an inch into the larynx. The right vocal band, at its posterior third, was the seat of a pale-red bean-shaped tumor, resembling the mass on the posterior wall of the larynx. Below the bands were several tumors of the same kind. A view of the left band was obscured by the mass on the posterior wall, but at the level of the ventricle a reddish prominence could be seen, on inspiration reaching almost to the middle line, and on phonation reaching still further to the right. The vocal band itself was thickened and posteriorly presented a depression into which the tumor of the right band projected. The subglottic mucous membrane was thickened. From the multiplicity of the growths, their circumscription, the absence of glandular involvement, the well-preserved nutrition, the age of the patient, together with the absence of evidence and history of syphilis and tuberculosis, a diagnosis of pachydermia verrucosa was made, and this was confirmed by subsequent microscopic examination. The administration of potassium iodide was followed by little change, so that by means of cutting-forceps the neoplastic growths were removed, a little at a time, until finally the patient was considered cured.

Advantages of Fogs.—No less an authority than the president of the Institute of Civil Engineers has declared that the sulphurous vapor produced during the combustion of coal is most beneficial to the health of the inhabitants of London, disagreeable though it undoubtedly is. As many as 350 tons of sulphur are thrown into the air in one winter's day, and the enormous quantity of sulphurous acid generated from it deodorizes and disinfects the air, destroying disagreeable smells emanating from refuse heaps and sewers and killing the disease germs which find their way into the atmosphere. There may be a good deal of truth in this view, but there is undoubtedly another side to the question. It is an old comparison that a doctor and his drugs bear a relationship to the patient and the disease like that of a policeman toward a householder attacked by a garroter. The policeman lays about with his truncheon; sometimes he hits the householder, sometimes the garroter, and the good or ill which results from his interference will depend upon which party happens to get the most and the heaviest blows. This simile is admirably suited to sulphurous acid in London fogs, for although it may be beneficial to the London householders, by destroying microbes, it certainly frequently does them harm by attacking their lungs and bringing on bronchitis and asthma, which sometimes prove rapidly fatal, to say nothing of the minor discomforts of a disagreeable taste, filthy smell, stuffed nose, husky throat, smarting eyes and headache. We think that, healthy though the London fogs may be, the discomforts they cause are so great that Londoners would be really better without them, and that less disagreeable and equally efficient means might be found to clear the air of microbes, while at the same time these other remedies would be enormously cheaper, for they would not entail the almost complete stoppage of traffic or the enormous expenditure of gas and electric light which a bad fog occasions. —*Scientific American.*

Death after the Intra-uterine Injection of Ferric Chloride.—Pletzer (*Centralb. für Gynäkologie*) reports the case of a woman, thirty-two years old, that presented herself with retroversion of the uterus and chronic endometritis. There was a history of syphilis, of repeated miscarriage and of cerebral hemiplegia. The cavity of the uterus was curetted and tincture of iodide was applied. A Hodge pessary was employed to keep the organ in position. A small myoma was found upon the posterior uterine wall. After four days of rest in bed, the uterus was irrigated with a two per cent. solution of carbolic acid, and tincture of iodine was applied. The next menstrual period occurred at the expected time; the flow was full and lasted a week. Subsequently the treatment was resumed; the injections were made at intervals of two days.

Considerable hemorrhage ensuing on one occasion, a half drachm of the official solution of ferric chloride was, by means of a syringe with lateral fenestra, slowly injected into the disinfected uterus and permitted to flow out, the uterus afterward being irrigated with a two per cent. solution of carbolic acid. The patient was put to bed. She complained of intense abdominal pain; the skin became livid, the pulse small and frequent, the breathing stertorous. Despite the energetic application of remedial measures, the woman died two and a quarter hours after the injection had been given. At the autopsy an old hemorrhagic area was found in the left optic thalamus. The right heart contained numerous thrombi situated among the trabeculæ. The pulmonary veins and their branches contained a few loose thrombi. From the right internal iliac vein, at the point of bifurcation of the common iliac, protruded a thrombus more than an inch long. The posterior surface of the interior of the uterus presented a longitudinal defect about a half inch long, resembling a tear of the mucous and muscular coats, perhaps a fifth of an inch deep. At the bottom of this defect were visible numerous small veins filled with dry, black, firm clots. One of these veins could be traced as a thick cord through the pelvic connective tissue to the common iliac vein. The blood throughout the body was fluid.

Primary Laryngeal Croup.—E. Fraenkel (*Deut. med. Woch.*) says that the presence of membrane in the fauces frequently extending to the larynx, trachea and bronchi, is almost unanimously looked upon as true diphtheria and as due to the Klebs-Loeffler bacillus, but that there is still some question as to the nature of a primary membranous laryngitis in which the fauces are intact. Four cases of this latter affection are here recorded in which no membrane was found in the fauces by the author, either before or after death. In one of the cases the child was said by the parent to have had white patches in the throat a fortnight before the fatal illness, but there was no reason to believe that this was diphtheria. Pure cultures of the true diphtheria bacillus were obtained from the membrane in all these cases. Inoculation experiments upon guinea-pigs gave rise to the symptoms and pathological appearances usually produced by this bacillus. The animal rapidly fell ill, and soon died with paralytic symptoms. Double hydrothorax, hæmorrhagic swelling of both suprarenal bodies, and slightly hæmorrhagic œdema at the site of the injection were found. The author would conclude that idiopathic membranous laryngitis is etiologically identical with genuine faucial diphtheria. The presence of an enlarged spleen, of changes in the kidneys, and of swelling of the lymph follicles, especially in the ileum, found in these cases, is also in favor of this view. There are two other affections of the air passages which, in the author's opinion, require investigation, namely, the pseudo-membrane seen in the bronchioles in acute pneumonia, and the bronchial casts of plastic bronchitis. In one case of fibrinous bronchitis from a fatal case of acute pneumonia the author found by cultivation and otherwise Fraenkel's pneumococcus in this exudation.—*British Med. Journal.*

THREE SIGNS OF PREGNANCY.—Dr. A. J. C. Skene (*Brooklyn Medical Journal*) says: First, in addition to the elasticity or softening of the uterus and its change of form, there comes with that a difficulty of mapping out the uterus. It is exceedingly difficult to outline it in some cases, and that very fact is of great value, because anything else which is likely to simulate pregnancy is more clearly defined because denser, as a uterine fibroid, subinvolution, a distended fallopian tube, or an ovarian cyst, for instance. More than that, in the early months of pregnancy the uterus grows out of proportion to its surroundings, and so its mobility, or the facility with which it can be displaced, is lessened. You will find it more difficult to raise a pregnant uterus up out of the pelvis or toward the superior strait than in any other condition—than in cases of most, not all, small fibroids which enlarge the uterus, or subinvolution, which does the same thing. This partial fixation is rapidly overcome in the latter months of pregnancy, especially after the third month, when the function of development of the uterine ligaments is taken up and goes on rapidly.

The second sign I would mention is the color of the mucous membrane of pregnancy, which is different from everything else—nothing simulates it. It is present in a less degree in ectopic gestation, but in normal gestation this color of the mucuos membrane is not simulated by any marked condition that I know of. That peculiar bluish-violet hue, if seen a few times, is easily recognized afterward, and becomes of the greatest possible value, and I depend very largely upon it. Of course it requires a careful speculum examination in order to see it, but it is worth the trouble in doubtful cases.

The third sign is the peculiar secretion in the cervix. There is a difference between the secretion in the cervix of the pregnant uterus and that of any other pathological condition. In the pregnant uterus cervical secretion has a whitish, opaque appearance that at first sight is very much like the leucorrhœal discharge in a case of muco-purulent cervical endometritis, but careful examination proves that it is not, because it contains pus, which gives the opaque appearance, while in pregnancy opacity is due to the coagulation of the albumen by the secretions of the vagina. This is characteristic of pregnancy, and occurs in no pathological condition, and is almost always present. When I find that opaque secretion of the cervix, that peculiar hue of the cervix and vagina, and the other physical signs, I am more positive of the diagnosis in the early months of pregnancy than in the fourth or fifth month, when the fetal motion is present, but, on account of a fatty abdomen, is hard to distinguish.

Buried Alive for Seventeen Days.—The teaching of experience, as illustrated by several recent instances of prolonged abstinence, though it may afford some idea of human endurance in this particular under special conditions, has yet provided no certain criterion of the vital resistance possessed by the average man when suddenly deprived of every form of sustenance. The measure of this force may nevertheless be gauged with approximate correctness from the history of recurrent instances of prolonged and accidental privation. As an example the following is remarkable, even in this category. It is the narrative of three Bohemian miners, who after being entombed by a fall of sand in the pit where they were working were finally rescued alive, though of course in an utterly prostrate condition, seventeen days later. During the period of their live-burial air was pumped down to them by bore-holes. On this they may be said to have lived without food and without water. The total want of the latter is what makes their survival so remarkable. But for this essential the longer fasts of professional fasting men would have been quite impossible. We can have no difficulty in understanding generally why this holds true if we bear in mind the fact that not only does water constitute by far the greater constituent of every tissue, but that without its due proportion the circulation and nutrition of the blood, and that needful if costly chemical change upon which all tissue repair depends, would be alike impossible. In endeavoring to trace the *rationale* of a life persisting, as in the case of the buried miners, in spite of the absence of every natural condition, we most notice one or two significant points. In the first place their condition was that of rest, their functional metabolism being proportionally less active, their waste of tissue diminished and their output of carbonic acid not so likely to overcharge the surrounding atmosphere. Further, we may take it for granted that a robust physique had no small share in the conservation of vital energy. Much depends in such cases on the amount of nitrogenous matter stored up, for the most part in muscular tissue, and available for destructive changes. We may safely assume that the amount of reserve nitrogen in the case of these men was not meager. It is mainly, no doubt, to this circumstance that we must attribute not only the fact of their existence, but the still more remarkable prospect of their convalescence and ultimate recovery.

SALOPHEN IN ACUTE RHEUMATISM.—From recent reports it appears evident that the new organic compound, acetylpara-amidosalol, or salophen, is to take a very high place in therapeutics, not only in acute rheumatoid maladies, but in those in which a principal object of treatment is to secure an undisturbed and continuous intestinal antisepsis, without risk of injury to the patient.

The *New York Medical Journal* of July 30, 1892, contains an article on salophen written by William H. Flint, M.D., of the Presbyterian Hospital, which forsehadows some of the excellent effects which may now be expected from this extraordinary new remedy.

Dr. Flint says that during his summer hospital service he caused salophen to be administered to all cases of rheumatism, and that he was so well pleased with its action that he " desires to make known to his confrères the advantages of salophen treatment, hoping their results may be as happy as his own."

The author presents detailed reports of six cases of acute rheumatism treated with salophen in 15-grain doses given dry upon the tongue and swallowed with cool water every three hours, and with sodium bicarbonate, in 10-grain doses, administered in the same way, thrice daily.

Dr. Flint's conclusions concerning the results obtained are stated by him as follows:

" From the above given histories it will be seen that in all the cases except the last the pains were quite relieved, the redness dispelled, and the temperature reduced to the normal point on *the second or third day of treatment.* In the exceptional case the patient may have exaggerated the intensity of her pain to prolong her stay in the hospital, but no objective symptom persisted after the seventh day of treatment. It is probable that a speedier result may be safely obtained by the use of larger doses, or of the same doses at shorter intervals. In none of the cases was the heart's action at all weakened, or was the digestion impaired by the remedy. The urine was unaffected by the treatment."

The writer concludes that: " We possess in salophen a remedy equally potent as the other salicylates to control the symptoms of acute rheumatic arthritis, but devoid of their tendency to weaken the heart's action, to disturb the stomach, and to produce albuminuria and smoky urine."

It will be observed, as hinted by Dr. Flint, that he might, had he so desired, have used larger doses of salophen, as, indeed, others have done, but many will agree that our best and most lasting results are often obtained with medium or small doses.

Dr. Flint adds: " It is the writer's purpose to conduct a series of experiments with a view to ascertaining whether salophen may be made available for securing intestinal antisepsis." We are glad to learn of this intention, not only on account of the author's well-known reputation in the treatment of gastro-intestinal maladies, but because other observers have already spoken of the value of salophen in such formidable affections as gastrectasis and other severe conditions of which abnormal fermentations constitute a symptom.

Reply to "Enlarged Prostate a Myth."—I notice in the April number (*Medical World*), page 131, an article by J. C. Campbell, M.D., speaking rather disparagingly of the attention given to the subject of enlarged prostate and exhorting physicians to pay more attention to "contractions and soreness of the urethra." I do not think there can be too much attention given to that most distressing and often fatal disease of the prostate gland and appendages, two fatal cases having come under my observation within a year, reminding me most forcibly of what may eventually be the means of my "taking off." It is true that, whereas I was once "young, but now am old" (nearly 80), yet never have I suffered my urethra to be impaired by the means he would have us believe. I am convinced that this affliction, diseased prostate, is much more prevalent that he would intimate, if I may judge from the inquiries from physicians that my article on the subject (Jan., 1891) called forth, no less than fifteen having written of their own cases. If the people throughout the country are afflicted in the same proportion, there must be a great many suffering with it.

The "urethral contractions and soreness" he advises us to examine are very simple ailments and easily treated compared with a real enlarged prostate, a fact that I think he would duly appreciate if he happened to be a subject of that "*enlarged prostate rut*" he speaks of.

Now, Mr. Editor, it may appear egotistic in me to further encroach on your space or patience, in reference to my own case, but as I have already given your readers something of my experience up to Jan., 1891, I venture to obtrude still further, though the subject may be hackneyed. In that article (Jan., 1891) I brought saw palmetto into notice as having helped me more than anything else I had ever tried, and felt very hopeful of its lasting effect, and can now say that its action on the gland has been effective in preventing further enlargement, but it failed to relieve, except temporarily, irritation of the neck of the bladder and prostatic portion of the urethra ; so I had to use the catheter occasionally.

Some four months ago my attention was called to a new remedy called "sanmetto," composed of saw palmetto and santal. As a drowning man will "grasp at straws," so I grasped at a bottle of the remedy, and have been using it for about three months, with great relief, for I have no use for the catheter now, and the deposit of mucus, instead of being an inch or more thick in a quinine bottle of urine, as formerly, is now nearly *nil*, and no pain or irritation in urinating. I think the combination of saw palmetto and santal is a happy idea—the former acting on the gland and the latter on the mucous membrane of the bladder and urethra.

It may lose its effect, as other things have, but it commends itself to my judgment as covering the pathological conditions better than any other remedy I have tried. For the benefit of those who have written on the subject, I can say it is pleasant to take, the dose, a teaspoonful about three times a day.—H. KNAPP, M. D., Lathrop, Cal., *in July Medical World.*

TYPHOID BY ANOTHER NAME.—Slow-going Europe was much amused at the characteristic official method employed at Chicago to meet the unpleasant effect produced by the publication of the figures representing the epidemic and endemic prevalence of typhoid fever in that city, and the extensive pollution of the lake water with which the city is served. There were 2,000 deaths reported from typhoid fever in 1891, and 311 deaths from typhoid in January of the present year. There was also evidence that the sewage of a city of some 180,000 persons passes directly into the lake, and that further pollution is brought about by means of the Chicago River, which communicates with the Mississippi as well as Lake Michigan. The simple reply made to this was that the doctors did not know how to diagnose typhoid fever, and that probably not more than 400 out of 4,000 cases so recorded were correctly entered. We have been awaiting with amused wonder for the response of the maligned medical faculty to this serio-comic retort, which would only be regarded as a bad and foolish joke in any other civilized city, whether of Europe or America. Meantime, it is instructive to note that instead of giving solidity or confirmation to the promise held out by Mr. MacCormach, the commissioner in Great Britain, that the sources of water supply would be, in good time before the Exhibition, carried two miles further out into the lake, the *mot d'ordre* appears to be to give this significant hint to the doctors that for the future they had better register what they have been in the habit of recognizing as typhoid fever under some other name. This will not, however, diminish the mortality, nor will it add to the confidence with which future and, perhaps, more reassuring returns will be regarded by intending visitors to the Columbian Exposition. A Chicago telegram of May 16 illustrates forcibly the danger to which the drinking supply of the city is now exposed. It reports that owing to heavy "rains flushing the city sewers, blackened and polluted water could be seen far out in the lake," and the current was dragging the stock-yard sewage into the lake at the rate of four miles an hour. The water among the "crib" of the city supply was to the eye not yet defiled, but the merest tyro knows how little reliance can be placed on the purity of the lake water under these circumstances. It is not by denials of the capacity of Chicago medical men to diagnose a disease so easy of verification (nay, so difficult to mistake), or by minimizing the serious import of the facts as to the water supply, that the sanitary work called for can be carried out. Until it is carried out, the lake water and its derivatives, and the potable compounds into which it enters, will be regarded with just suspicion.—*British Med. Journal.*

The Hypodermic Injection of Camphor.—The employment of camphor hypodermically, in solution in oil, alcohol, or alcohol and ether, is much more general on the Continent than in England. German and Russian practitioners esteem it a valuable method of treating symptoms of impending collapse. Dr. Alexander, of Berlin, has published in the *Berliner Klinische Wochenschrift* a paper giving the results of an extensive series of observations made during the last two years on the effects of hypodermic injections of oleum camphoratum (composed of 1 part of camphor to 9 parts of olive oil) in a large number of cases of disease of the lungs. The dose given was 15 minims once a day. As the effects of camphor are cumulative, it was found that four daily injections were as much as could usually be borne without some unpleasant effects, such as headache and restlessness at night. After an interval of a week, however, one more injection could be given without causing any unpleasant symptoms. Phthisical patients seem to bear continued treatment better than others, and its results in the last stage of phthisis were very valuable, the night-sweats, the irritating cough, and the expectoration being diminished in a remarkable manner, even the first dose effecting a very noticeable improvement in the patient's condition. In hæmoptysis the method also proved very useful, patients being enabled to get about again, without fear of a recurrence, more rapidly than under ordinary methods. Camphor injections administered in bronchitis increased the secretion at first, and afterward caused it almost to disappear. They did not seem to be of much use when there was also emphysema. In pneumonia their value was especially marked in weakly individuals or in those with cardiac disease, and they cut short follicular tonsillitis and acute coryza. It was found that in some cardiac cases, where digitalis had ceased to be of benefit, after a few camphor injections, it could be again given with good results, These injections must, of course, be given to children only in very small quantities, but no effect appeared to be produced on the infants of mothers who were being treated by camphor injections for catarrhal pneumonia.—*Medical Record*, October 17, 1891.

Aspiration, from the Patient's Standpoint.—(*By Walter Bensel, M.D.*) Shortly after the blizzard of a few years ago I contracted a pleurisy, with effusion, from exposure during the storm. The effusion became so large and caused such considerable dyspnœa, dysphagia and displacement of the heart that it was deemed advisable to aspirate and withdraw some of the fluid. The first needle that was introduced was a small hypodermic-syringe needle, simply for diagnostic purposes. The only thing that I observed at this time was that the pain was much more considerable than I had supposed it would be. Soon afterward another, larger-sized needle was introduced to remove the fluid, and then I noticed that there were two distinct sensations of pain, equal in intensity, but different in character, one as the point of the needle passed through the skin, and the other just before the fluid was reached. The second was precisely the same as the "stitch in the side" felt with a dry pleurisy. A reaccumulation of serum occurring in a few days, a needle was again introduced. Only a small amount of fluid was removed before the lumen became obstructed in some way, and the needle was withdrawn and reintroduced in another situation. A few minutes before each of these two aspirations, a four-per-cent. solution of cocaine was injected hypodermically, so that no pain was felt as the needle passed through the skin. The same degree of pain occurred as before, however, when the needle passed through the pleura. These facts would seem to indicate that the pleura possesses nearly, if not quite, as great sensibility as the skin itself. —*Sloane Maternity Hospital.*

Coffee as an Antiseptic.—The experiments of Luderitz, of Vienna, tend to establish the belief in the antiseptic properties of coffee. A strong solution of coffee, for example, ended the career of a bacillus of typhoid in about twenty-four hours, the active streptococcus of erysipelas in twelve hours, while not longer than from three to four hours was sufficient to kill the malignant comma bacillus of cholera. Strong decoctions acted more quickly still; the effects, however, are stated to be due more to the products of the roasting of the coffee than to the active principle of the berry. In this connection it has been pointed out by a correspondent of the *Indian Medical Gazette* that it would be worth while to substitute coffee for tea among the cases of enteric fever in the European military hospitals in India. Coffee also might be given a trial in the treatment of cases of typhoid fever in this country. As a beverage, doubtless, it would be appreciated by the patient, and in the light of Luderitz's researches there is just the possibility that it might have some controlling influence over the disease.—*Medical Press.*

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MEDICAL NEWS AND NOTES.

An American schooner from Havana recently arrived at the quarantine station of one of the Florida ports. She was fumigated and placed in quarantine. Subsequently yellow fever developed, when she was, under charge of a quarantine officer, moved about six miles out of the way of passing vessels. In all, four cases developed.

Dr. Gibier, an enthusiastic follower of Pasteur, in his methods of inoculation for the prevention of hydrophobia, and who has successfully conducted a Pasteur Institute in this city for several years past, has filed plans with the Building Department of this city for a five-story building to be used as a hospital, on the corner of Central Park West and Ninety-seventh Street. The building will be large and will contain every convenience and appliance for the special work to which it will be devoted. It is a fine site for an institution of this kind, and we have no doubt that the energy and enthusiasm which Dr. Gibier has always displayed in his special field of work will make it a success.

Cæsarean Section.—H. C. Coe, of New York, has done the Cæsarean section within ten weeks, saving mother and child in each instance.

Dr. W. Thornton Parker will deliver a course of lectures on Medical Jurisprudence at the College of Physicians and Surgeons, Chicago, during the ensuing winter.

The American Association of Obstetricians and Gynecologists and the American Gynecological Society will both hold their annual meetings September 20th, respectively, at St. Louis, Mo., and Brooklyn, N. Y.

In view of the recent appearance of small-pox in certain tenement house districts in this city, the Board of Health has completed arrangements for a thorough house-to-house inspection of all suspected districts. The following are among other instructions given to the physicians engaged in this work :

Vaccinate all persons who wish it, or who have been in any way exposed.

Recommend every one to be revaccinated as soon as the cold weather will admit, both adults and children.

Before vaccinating, cleanse that portion of the arm where the virus is to be applied with the antiseptic solution. Virus, needles, antiseptic solution and lint will be supplied at this office.

THE TREATMENT OF THE MORE SEVERE FORMS OF VOMITING OF PREGNANCY.—Routh (*Der Grauenarzt*, March, 1892) states that in seven years' practice he has always been able to arrest the vomiting of pregnancy by brushing the cervix and lower cervical canal with a mixture of equal parts of iodine, iodide of potassium, spirits of wine and water. In general vomiting ceases immediately after the application. If the vomiting should recur, the cervix should again be brushed. Generally after this the vomiting will be permanently relieved.

A LABORER'S wife recently died at Gortallea, Ireland, from hydrophobia. A few weeks before she had been bitten by a cat, and two days before her death she showed symptoms of hydrophobia.—*British Med. Journal.*

THE second International Dermatological Congress will be held in Vienna from September 5 to 10, 1892.

THE GRADY HOSPITAL AT ATLANTA.—This hospital, which was erected as a memorial to Henry W. Grady, has been opened in Atlanta, Ga. The city appropriated $15,000; the rest was raised by private subscription.

REVOKED THE HOME'S LICENSE.—The State Commission in Lunacy has revoked the license of the Brunswick Home, at Amityville, L. I., which cares for idiots. The license is taken away on the ground that the managers of the home refused to provide a medical superintendent.

UNIVERSITY OF VIENNA.—Otto Bergmeister has been elected Professor Extraordinary of Ophthalmology; Josef Englisch, Professor Extraordinary of Surgery; Ferdinand Hochstetter, Professor Extraordinary of Anatomy; Alexander Kolisko and Richard Paltauf, Professors Extraordinary of Pathologic Anatomy.

RUSH MEDICAL COLLEGE.—Dr. Charles Warrington Earle has been called to the chair of Obstetrics and Diseases of Children in Rush Medical College, recently made vacant by the death of the late Professor Knox. Dr. A. C. Cotton has been elected Clinical Professor of Diseases of Children.

EFFECT OF ICE BAGS IN AMPUTATION.—Dr. J. Shaud reports two cases illustrating the advantages of ice in amputation cases, in both of which the wounds healed by first intention. He has also used cold water dressings after operations for shattered hand (all caused by gunpowder explosions during the shooting season) with very satisfactory results. In his opinion the ice dressing acts as an excellent hæmostatic and antiseptic.—*Edinburgh Medical Journal.*

PAINFUL SENSATIONS ABOUT THE HEART, however alarming to the patient, are usually regarded by the medical practitioner as but little likely to be connected with organic cardiac disease, but rather to be due to indigestion, neuralgia or rheumatism. Nothnagel has discussed this subject in a paper lately, and finds reason to think that painful sensations in heart disease are more common than is supposed, and that the complaint of pain in the cardiac region should not be treated lightly even if no disease of the thoracic organs is to be discovered. If these pains are due to dry pleurisy, neuralgia or rheumatism, why, he asks, are they limited to the left side, and not felt on the right side and back as well? The answer to this, or at least a partial answer, undoubtedly is that pain in the left side attracts much more attention than pain in the right side, because people are always suspecting themselves of heart disease, and pain there attracts their attention when pain in other regions would not. —*N. W. Lancet.*

IT IS SOMETIMES difficult to distinguish between a functional and organic heart murmur. An organic murmur is increased by anything that increases the force of the muscular contraction of the heart. If you make the patient walk about the room, or up and down stairs, so as to throw a little additional work on the heart, then the murmur becomes more distinct. Another distinguishing feature is that organic murmurs are more harsh than functional murmurs. The seat of an anæmic blowing is to the left of the sternum, about the third costal cartilage, or even the area of the pulmonary artery. It is a systolic murmur. In cases of marked anæmia, there is a purring, blowing murmur in the jugular vein, which is called the *bruit de diable.* It is a purring sound, like that made by a cat. Its exact cause is not known, but it may be due to some alteration of the relation existing between the blood and the containing vessel.—*Times and Register.*

A FRENCHMAN, M. Branbelay, has succeeded in making pearls by simply boring holes in pearl oysters, dropping in minute glass beads, and then hermetically sealing the holes.

THE BACILLUS OF ECLAMPSIA.—The *Deutsche medicinische Wochenschrift* of May 12 contains the announcement that Dr. Gerdes, first assistant in the Pathological Institute of the University of Halle, has in a severe case of eclampsia succeeded in demonstrating by culture the presence of a short bacillus in the liver, lungs and kidneys, and also in the blood. This bacillus is extremely virulent when inoculated in rats or mice, causing convulsions in the latter. In all the animals experimented on coma set in, the respiration became shallower, the body temperature became subnormal, and death occurred in a short time. In guinea-pigs convulsions came on only after intravenous injections (the jugular vein was selected for the purpose); subcutaneous and intraperitoneal injections produced no such effect. The bacilli referred to were found in great numbers in the lungs, kidneys and liver of patients suffering from eclampsia, especially in the form of bacillary emboli, the starting point of which was probably a primary focus in the placenta. Dr. Gerdes promises a preliminary communication on the subject without delay.

OSSIFYING MYOSITIS.—MACDONALD (*British Medical Journal*) reports the case of a girl four years old, in whom at two years of age hard nodules developed in numerous muscles of the head, neck, upper extremities and trunk, occasioning rigidity and interfering with the movements of the affected parts. No hereditary factors could be elicited. Treatment was of no avail. Portions of the indurated parts removed were constituted of bone, having fibrous attachments of origin and insertion.

OPERATIONS UPON THE GALL BLADDER.—In a paper read before the French Surgical Congress, Dr. Terrier reported eight cases of cholecystectomy, with seven complete recoveries and one death. Of his cholecystotomies three cases recovered, among them a child twelve years of age, whose bile contained micro-organisms. One case terminated fatally from peritonitis. He performed cholecystenterostomy in a case of tumor of the head of the pancreas, the patient dying six months after the operation. Léonte reported two cases of cholecystotomy, in one of which the bladder was extirpated latter on account of persistence of the fistula. Richelot has performed cholecystenterostomy without permanent success. Cholecystotomy was done at a later period and the patient died of hemmorrhage from the hepatic artery. Duret opened the abdomen in the case of a very obese woman who had suffered for six years from abdominal pains, and finding a sclerosis of the gall bladder owing to the presence of calculi, he performed cholecystotomy with success.

Deaths in the Profession Abroad.—Dr. Hermann Nasse, who occupied the Chair of Physiology in the University of Marburg from 1837 until 1879, died recently in his 82d year. He made numerous contributions to the physiology of the blood, lymph and chyle.—Dr. Ludwig Friedrich Leo, of Bonn, Secretary of the Scientific and Medical Association of the Lower Rhine, has died at Bonn in his 78th year

A Bullet in the Skull for Forty-three Years.—Saxer (*Corresp. Blatt f. Schweizer Aerzte*) reports the case of a soldier who, when twenty years old, was struck by a bullet in the region of the left mastoid process, the missile perforating the bone and remaining unextracted. The patient lived for forty-three years after the reception of the injury. For twenty years a sinus persisted, the wound suppurating moderately. The patient complained of pain and a sense of weight and boring in the head and noises in the ear; there were mental confusion, impairment of memory, and other psychical symptoms. At the autopsy the flattened bullet was found imprisoned between the dura mater and the bone, in the midst of an inflammatory hyperplasia, behind and below the pervious defect in the bone. There was a permanent depression at a corresponding point in the left occipital lobe.

Dr. Amory Lamphear gives an account of a gastrostomy (cancerous tumor, left side of neck preventing deglutition) under cocaine; one-half drachm of a 4 per cent. solution was injected into the subcutaneous alveolar tissue, along the line of the proposed incision. The operation lasted twenty-minutes and was not accompanied or followed by any ill results; no shock and no sense of pain or discomfort, other than slight nausea when the edge of the liver was turned up.—*Jour. Am. Med. Association.*

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EDITORIALS.

According to a newspaper report, on a single day, Aug. 15th, there were 7,600 new cases of cholera reported in Russia and a total of 3,900 deaths. As there is no telegraphic communication with many of the towns in Russia, it is possible that the true figures are in excess of those here given. The disease is abating at Nijnii Novgorod, Astrakhan and in the Transcaspian territory, but in some other districts the number of deaths continues excessive. A most lamentable degree of ignorance must prevail among the inhabitants of some provinces, for at Starobelsk a mob attacked a hospital and completely demolished it. The physicians were assaulted, and only escaped probably serious injury by the intervention of troops who had been summoned to restore order. Apropos, it is a cause for congratulation to know that the Health Department of the city of New York is fully alive to the dangers to which we in this section of America are exposed, through possible entrance of immigrants who have already contracted cholera, and believe themselves able to prevent any case slipping through Quarantine. Should the disease make its appearance in the city, a plan of action has already been decided upon. There is more danger that the disease will enter, if at all, through some port where quarantine surveillance is lax, and come to us overland from Canada or Mexico. The Health Department is preparing a circular, to be issued at the proper time, giving certain instructions in case of an epidemic.

Dr. Brouardel, of Paris, has reported that the outbreak of a disease resembling Asiatic cholera in some places on the Seine, a few miles below Paris, was not Asiatic cholera at all. He declares that no case had the characteristics of true Asiatic cholera or could be traced to importation. A local cause, pollution of the water used, was sufficient reason for the outbreak.

Since the above short article concerning Asiatic cholera was written, news has been received in this country which cannot leave room for the slightest doubt that if we escape a visitation from this scourge it will only be through the strictest and most careful efforts on the part of the health authorities at our numerous ports of entry. It can no longer be concealed that the disease has prevailed in Hamburg since August 12, and that up to date more than 400 cases have been reported, the number of deaths exceeding one hundred. Three deaths occurred among some troops who were temporarily quartered there, and to prevent a further outbreak among them they were removed to the interior. The use of the water of the Elbe, on which Hamburg is built, has been prohibited by the police, the bathing places along the river have been closed, and a house-to-house inspection to insure cleanliness, and to enforce sanitary measures where required, has been ordered. Although it may be said that due publicity was not given to the appearance of cholera in Hamburg early enough, it is plain that they are now making every effort to prevent its spreading. The city of Antwerp is pursuing a vacillating and most dangerous course, for while it is perfectly evident that the disease is present there, one-fourth of those attacked dying, she has so far persisted in giving clean bills of health to outgoing ships. This action has been severely criticised, and other European cities have instituted quarantine against her. At Havre it appeared some days ago, and there have already been a number of deaths from it. When we stop to reflect that we have frequent communications with all of these ports, particularly with Hamburg and Havre, from which cities some vessel enters the port of New York almost daily, and that thousands of passengers, both first-class and steerage, come from them to this country every year, we can easily see that we have a menace at our doors that commands our most serious attention. Several of the steamship companies have already announced their intention not to take any more steerage passengers from infected districts, and the Columbia, one of the fast steamers of the Hamburg-American Packet Company which plies between New York and Hamburg, went only as far as Southampton on its last eastward trip. So far as is known, the officers of the different steamship lines which come to our several ports have shown a gratifying disposition to coöperate with our health authorities in enforcing sanitary measures.

During the last few days the disease has made its appearance in England. On Aug. 25th two passengers who had been landed at Gravesend by a steamer from Hamburg were taken sick shortly after landing, and died soon after being attacked. This fact was promptly telegraphed throughout the British Isles, and caused the health authorities to be on the watch for all ships hailing from suspected ports. Indeed, shortly after this, one steamer, plying between Hamburg and Lynn, was examined at the latter port and two suspicious cases were found on board. She was promptly ordered back to sea, and, notwithstanding the protests of passengers and crew, no one was allowed to land. While it is probable that this summary treatment subjected the passengers and the officers of the steamship company to some inconvenience, and to more than ordinary expense, the action of the health authorities can only be approved, and we hope it will be a cue to the men who hold the same positions in this country. Quarantines and the other sanitary regulations which ought to be enforced at such a time as the present are apparently a delay, an inconvenience and a detriment to business ; but the good which they accomplish far outweighs the apparent injury which they inflict. When life is concerned, all else must be subservient. Too often has human life been sacrificed to mercantile interests, and indeed, medical men themselves have been somewhat to blame for it, for at the International Medical Congress held at Constantinople in 1873 it was resolved that "the practice of (land) quarantine as carried on ought not to be maintained, because, on the one hand, it does not constitute a real protection, and on the other hand, *it is directly opposed to the interests of commerce and industry.*" Certainly a most startling resolution to emanate from any body of medical men. Had they simply condemned a lax execution of the quarantine laws and pointed out means of making quarantines more effective, the resolution would have been much more worthy of such a body. That quarantine does protect is perfectly plain to any one who is familiar with the history of quarantines; and because cases do slip through sometimes, the principle should not be condemned. From appearances, the health authorities of New York City are exercising care and vigilance and, to a certain degree, have confidence in their ability to exclude cholera from this port. We hope that they, and the health boards of all the other ports of entry also, will be successful.

PARAMETRITIS.—Of late years, in obedience to the laws governing subdivision of labor, a number of the medical profession have devoted themselves with especial predilection to the surgical part of gynæcology. The result has been a great improvement in the operative procedures, particularly in abdominal surgery. While willing to listen with respectful attention to the suggestion of these gentlemen in all matters pertaining to those subjects on which they can speak with an air of authority, we must deprecate in the most decided manner the attempt of certain gynæcological surgeons to overthrow the doctrines which the whole medical profession, except themselves, hold in regard to the pathological significance of the pelvic connective tissue. We shall endeavor to show, without going into the subject, which is a vast one, to a profound degree, that these gentlemen have no standing room whatever. We have before us two papers which represent the tendency we allude to, and which may, from the prominence of the authors, be regarded as reflecting the views of a certain class of modern gynæcological surgeons, in an authoritative way. The first of these papers is from the pen of Joseph Price, of Philadelphia, and is entitled the "Natural History of Pelvic Inflammation," and was read before the Medical Society of the county of Erie, June 14, 1892. The second is by William Warren Potter, of Buffalo, N. Y., and was read before the Mississippi Valley Medical Association, at St. Louis, October 16, 1891. According to Dr. Price, "just what cellulitis is and where we shall find it is a perplexing question." Again, "what we want to remember from an anatomical standpoint is that which has been called periuterine deposits; phlegmons cannot be located between the uterus and peritonæum because of the absence here of sufficient cellular tissue to make it possible. As Bernutz says, "there is no cellular tissue lateral to the uterus, except that which enters into the structure of the broad ligament." Dr. Potter informs us in the paper just mentioned that "it will be observed by an examination of the modern literature of this subject that the terms perimetritis and parametritis are gradually disappearing." He continues: "No little confusion has resulted from the use of these terms, and it is therefore well that they should be dropped. And so, too, with cellular abscess, for it may be questioned whether there is any such condition, the pus sac being really the diseased tubes and ovaries, or secondary to such conditions." He quotes approvingly the remarks of Tait, who says, "in the employment of the terms perimetritis and parametritis, as introduced by Virchow and advocated by Matthews Duncan, we have introduced a wholesale confusion into gynæcology which will take many years of industrious work to get right." Dr. Potter also approves the proposition enunciated by McMurtry, of Louisville, that "inflammation of serous and cellular intra-pelvic tissues cannot be separated clinically nor histologically; hence they cannot be properly distinguished by the terms perimetritis and parametritis." In a word, these gentlemen coolly propose to ignore the results of careful anatomical study, the facts furnished by pathological anatomy, the logical deductions derived from experimental research, and finally, the views entertained by the most accurate clinical observers throughout the world. Of all the anatomists who have studied the pelvic organs in the female, no one has shown more accurate anatomical knowledge than Luschka. Let us hear what he has to say. After a careful description of the peritonæum in the female pelvis, he proceeds as follows: "Beneath the end of the peritonæal sac thus arranged there is expanded a layer of cellular tissue, containing more or less fat, around the sides of the pelvic organs, free from the peritonæum, which occupies in uninterrupted connection the interstices existing between the lower boundary of the peritonæum and the Levator Ani. When we reflect that the latter muscle, constituting in some measure a diaphragm of the pelvis, descends from either side toward the median plane, consequently more and more removed from the inner surface of the lateral walls, then it is obvious that it separates the cavum pelvis into two spaces, one lying above and one beneath it. But since now the peritonæum does not descend to the upper surface of the levator ani muscle, an intervening space must exist between the two, so that the division of the entire pelvic space lying between the levator ani muscle may be divided into a *cavum pelvis peritoneale* and into a *cavum pelvis subperitoneale.* But also between the lower surface of the levator ani and the sides of the pelvic wall turned toward it an intervening space remains filled by a layer of fat which may be called *cavum pelvis subcutaneum*, as it is closed below by the skin. Of these three divisions of the cavity of the small pelvis the *cavum pelvis subperitoneale* claims a great practical interest because its contents that surround the sides of different organs, where they are free of the peritonæum, are so frequently the seat of abscesses which make their way outside in different directions, for example through the foramen ischiatum majus, beneath the gluteal muscles, etc.

The sections of the pelvic connective tissue by Freund are worthy of careful study, and enable us to understand clearly the relations of a parametric exudation. In the beautiful atlas accompanying his gynæcological clinic are a number of illustrations (sections) demonstrating the seat of parametric infiltrations. No man can be mentioned who has given to the study of the pelvic connective tissue more careful, conscientious work than Freund; yet listen to him: "There is scarcely an important disease of the pelvic organs in which the pelvic connective tissue does not play a greater or smaller rôle; in many respects its participation gives the standard for the prognosis and the therapeutic indication in acute and chronic diseases of these organs. So that it cannot be overlooked or underestimated without danger. In this sense we may say that the pelvic connective tissue controls gynæcological pathology." The teachings of pathological anatomy are here clear and explicit. No one can read the masterly exposition of Virchow upon puerperal metritis and parametritis without being convinced of the correctness of this exposition. In this he gives the key to the explanation of the reason why so many fail to see the true pathological condition.

Speaking of a puerperal woman who dies shortly after the development of parametritis, he remarks: "What do we find when a puerperal woman dies accidentally at this early period? We may say, perhaps, that in the usual sense of a coarse autopsy nothing is to be found, and especially may we assert with tolerable certainty that if such an uterus were the subject of one of those ingenious examinations which we are accustomed to call forensic, it would have certainly been put down as normal or healthy. * * * Nothwithstanding much is to be seen here—as much at least, as in an inflamed cornea in the first stages of its disease, we must, to be sure, look with care, and I am convinced that each one who turns the proper attention to the subject will find without difficulty the true conditions if he has only acquired in the first instance an understanding of what the question is." Ziegler, who is certainly one of the highest authorities in pathological anatomy, declares that the subserous connective tissue is not rarely the seat of inflammation and describes its character in detail. Birch Hirschfeld, in his excellent text book of pathological anatomy, deems the subject worthy of careful exposition.

For those who doubt its existence without post-mortem demonstration, we would refer to the excellent account of a case reported by Schlesinger, in which Klob, of Vienna, made the careful autopsy. The drawing illustrative of the condition will be found im Schlesinger's work, "anatomical and clinical investigations on extraperitoneal exudation in the female pelvis." The clinical studies of Ziegenspeck, confirmed by post-mortem investigation, demonstrate in a conclusive way the existence of parametritis posterior

The way taken by an effusion in the pelvic connective tissue has been investigated experimentally by Kœnig and Schlesinger in an exhaustive msnner. These researches throw a flood of light upon the behavior of extra peritoneal exudations and cannot be ignored by any gynæcologist who proposes to discuss this theme intelligently. What shall we say of the clinical evidence? Is it conceivable for a moment that a man of the consummate genius of Sir James Y. Simpson, who was perfectly familiar with the fallacious arguments of Bernutz, was deceived in regard to the existence of such a disease as an inflammation of the pelvic connective tissue! Can it be that so sagacious a clinical observer as Spiegelberg was under a delusion when he wrote his graphic description of parametric exudations? Or again, will any unprejudiced gynæcologist regard it as probable that a man of such splendid intellectual endowments as Karl Schroeder, whose contributions to surgical gynæcology were so valuable, could have simply propagated error when he taught the pathological significance of parametritis? Among the present cultivators of this branch of medicine, we may invoke the concurrent testimony of such men as Martin, Winckel, Fritsch, Fehling, Olshausen, Zweifel, Bumm, Saenger, Hart and Barbour, Emmet, Thomas, Skene, and a host of others to fortify our position.

The *Lancet* reports that a preliminary meeting was held on Monday at the residence of Sir Spencer Wells, who occupied the chair, at which it was agreed to call a general meeting in October to consider the best way of promoting an international memorial of Semmelweiss and his great services to humanity. There were present Sir Joseph Lister, Dr. Priestly, Dr. Playfair, Dr. Graily Hewitt, Dr. Glover, Dr. Black, Dr. Boxall and Dr. Duka. Letters expressing sympathy with the movement and regret at being unable to be present were read from several well-known members of the profession. Nothing can be more fitting than such a movement. Though originating abroad and in the native country of Semmelweiss, it appeals to all nations, and especially to the medical profession of all nations, which alone can estimate the value of Semmelweiss's simple but fruitful work. He was the pioneer of antiseptic midwifery. Though, in point of fact, antisepticism in surgery was achieved independently of the work of Semmelweiss and on other lines, the presence of Sir Joseph Lister at the meeting shows his appreciation of the labors of that physician. Semmelweiss was the first to demonstrate that the origin of a large proportion of cases of puerperal fever was due to perfectly preventable causes, often attached to the person of the accoucheur. It was in 1847 that Semmelweiss, as assistant to Professor Klein in the Maternity

Institution at Vienna, laid down the rule that all persons, previous to the examination of a parturient patient, should wash their hands in a solution of chloride of lime. The mortality fell in a few months from 12 to 3 per cent. We need not here dwell on the significance of such facts. It is painful to think that, like the case of so many great benefactors, his proposals were met with so much coldness and resistance and even personal animosity that his mind rapidly gave way, and his career closed in 1865 at the early age of forty-seven. There is the more need for a later generation to do him justice and to accord him honor. We sincerely commend this movement to our fellow countrymen and to our readers. This is not an occasion for complaining of the number of demands for testimonials. If life-saving is the supreme achievement of medicine, here is one of its finest illustrations. English and American surgeons for like feats have long enjoyed the fame of all nations. Let us be foremost in acknowledging the merit of a foreigner who has redeemed a branch of the profession from a great stigma, and has saved thousands of lives from one of the most pitiful of all deaths.

THERE HAS BEEN a great deal written and said recently about the easy contagiousness of glanders in this country and its frequent appearance in mankind; also the criminal carelessness of those who use horses in great numbers has been justly and strongly condemned. In this connection it is interesting to read the following report from the *Lancet:*

Glanders in Mankind.—The dangers attending the prevalence of glanders in horses in London and other parts of the United Kingdom have been brought prominently before the public by an inquest held before the coroner for the city of London last week at St. Bartholomew's Hospital on a woman aged twenty four years, the wife of an ostler, residing at Compton-mews, Brunswick square, who died at the above-mentioned hospital from this loathsome malady. There is nothing extraordinary in people dying from this essentially equine disease, and the only wonder is that more cases are not recorded, considering the extent to which it prevails; the only matter of interest is in the way in which infection is supposed to have taken place, if we may judge from the evidence given before the coroner. It appears that the husband, wife and two children occupied two rooms over stables in the mews, and in one of these stables horses were taken ill about a fortnight previously. The illness from which they were suffering was stated to be farcy (or skin glanders), and two of them were subsequently destroyed because of being so affected. The woman had nothing to do with the stables, but it was suggested that she might have become affected through using water conveyed in a pail upstairs from the stable. The house physician of the hospital was of opinion, when stating that the woman had died from glanders, that using water from a pail that had been contaminated by a glandered horse, if she had a superficial wound, would be sufficient to impart the disease. The use of public watering troughs in London has long been suspected of spreading this disorder among horses, and it has been often suggested that resort to these should be prohibited until glanders is suppressed; but up to the present nothing has been done to ascertain whether there is any foundation for such an accusation against these refreshing places. We have already complained of the very perfunctory and lax manner in which this dangerous and destructive disorder is dealt with by the Government and the great harm that results from considering glanders and farcy as different maladies instead of two forms of the same disease, each equally infective and damaging. It is high time more energy and intelligence were displayed, and this is rendered more palpable by the statement made at the inquest alluded to by the house physician that there was then another woman in the same hospital suffering from the same complaint. There is only too much reason to apprehend that not a tithe of the cases of glanders occurring among horses in London and the provinces are reported to the sanitary authorities.

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ORIGINAL ARTICLES.

ARTICLE I.

MALARIAL PNEUMONIA.

BY W. TH. PARKER, M.D. (Munich), M.M., LL., Beverly, Massachusetts.

During the past twelve years, while living on the frontier of New Mexico, Texas and Kansas, I have collected from various sources items relating to the condition known as zymotic pneumonia, or as we would more properly designate it, malarial pneumonia. Many cases have been brought to my notice and under my professional care which seem to me to prove beyond a doubt that malarial pneumonia is a distinct disease, and not a mere accident occurring during an attack of intermittent or remittent fever. The result of these investigations has in my mind emphasized the fact that malarial infection attacks the blood primarily, and it is on this account that pneumonia in these regions is very prevalent and oftentimes so rapidly fatal. In the *Journal of the American Medical Association* of October 10, 1885, is to be found as interesting editorial on "Pneumonia: Its Fatality," and also an article by Dr. W. P. Hart, "Thoughts on Some Points Connected with Pneumonia." In the latter are the queries—1st, "Is pneumonia simply an inflammation of lung tissue, purely local, or is it a constitutional disease with this local manifestation?" 2d, "Should general blood-letting, or venesection, ever be resorted to in its treatment?" 3d, "Are blisters ever indicated or permissible in the treatment of pneumonia?" 4th, "Does this disease ever present a state or condition in which belladonna is indicated and is the sheet anchor to the patient's life?"

The answer to the first question is not required, as at the present the different forms of pneumonia are pretty well understood; but with regard to the discussion concerning blood-letting, we are of the opinion that many cases do occur where this practice of our ancestors might be of the greatest value. We are not likely, however, to ever run across a case of zymotic pneumonia where blood-letting would not be attended by serious if not fatal results. Zymotic pneumonia is seldom if ever associated with a plethoric condition, but invariably occurs in those who are suffering from malarial anæmia. We have never seen a case of malarial poisoning where the blood does not present manifestations of disease and the patient show very clear symptoms of anæmia.

Blood-letting was not abandoned as "bad practice," or because it had of itself "outlived its day," but, as is well known, it become unserviceable on account of the very general change in the constitutions of the present and the preceding generations.

Our fathers were intelligent practitioners, and the success which crowned their faithful efforts in combating diseases proved them competent to treat diseases and bring the patients safely through to health.

In the *Boston Medical and Surgical Journal*, March 3, 1881, Prof. N. S. Davis contributes a paper on pernicious intermittents :

"You will remember that in speaking of the *modus operandi* of malaria on the human system, I deviated from the opinions most commonly expressed on this subject, which are that malaria, whether organic or inorganic, produces its primary impression upon the nervous structures through the medium of the blood. Instead of this, I claimed that its presence in the blood produced a primary and direct effect on the elementary properties common to all the tissues; namely, susceptibility and vital affinity; and that the nervous disturbance was only a part of this more general action. I further explained that it primarily caused an increase of the general susceptibility or excitability, coincident with a decided diminution of the vital affinity by which the tonicity of the tissues and the atomic movements are controlled.

"Owing either to the intensity of the exciting cause (malaria) or some peculiarity of the individual, the depression of that property is so great as to endanger an actual arrest of capillary circulation and molecular changes as they occur in the processes of secretion, nutrition and disintegration; and hence the extreme danger of actual suspension of life in the paroxysm. Or, if reaction does not take place, it is liable to be incomplete, leaving the circulation, molecular changes and temperature of some of the parts still depressed, even through the intermission. The essential pathology of the pernicious chill therefore is, that the play of vital affinity is so far overcome as to make the restoration of the natural atomic or molecular relations between the constituents of the blood in the capillaries and the organized tissues extremely difficult. This being the essential feature of the disease, it is necessarily dangerous, because whenever the properties of the tissues become so involved that they lose their inherent power to attract new atoms from the blood and return old ones, as in the natural processes of secretion, nutrition," etc.

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He divides his groups into the comatose and spasmodic, the pulmonary and the choleraic. He states that, "In the third group of cases the force of the disease, instead of falling upon the brain or spinal cord, is manifested chiefly in the respiratory organs, and the patient, on going into the paroxysm or chill with its general phenomena of depression, feels great oppression across the chest; the breathing becomes laborious, the finger-nails blue, the lips leaden, and the pulse frequent and feeble, with impairment of circulation in the cutaneous surface. While the mind remains clear, though often inclined to drowsiness, the stagnation in the pulmonary capillaries and consequent dyspnœa increases rapidly. At first there is a universal mixture of moist and dry râles passing rapidly into the submucous and mucous rhonchi, all over the chest from the clavicles to the diaphragm, posteriorly and anteriorly.

The accumulation in the lungs is sometimes so rapid that the air cells become literally overwhelmed by compression and œdematous infiltration in three or four hours, shutting the air off so completely that the patient dies directly from suffocation. One case of this kind came under my observation many years ago that terminated fatally in about eight hours. More recently, in consultation with another physician, I saw a case almost equally rapid in its progress, but which was arrested, and recovery took place."

Dr. R. C. Newton, of the Medical Department of the U. S. Army, published in the *Montreal News*, July 5, 1884, a very instructive contribution to the study of the etiology of malaria. In accounting for the prevalence of malarial diseases at Fort Sill, Indian Territory, he states the supposed cause as follows: "The banks of the creek afford all the supposed factors for the production of malaria, and to the writer it seems that the course of the malarious sicknesses during his term as post surgeon demonstrates that these factors do produce the specific poison here, which the north wind brings into the post."

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"I am aware that some remarkable instances have been recorded of the growth of a line of shade trees, or the removal a few hundred yards of a dwelling or barrack stopping malarial fevers, etc. It has even been asserted that screens or mosquito nets will shut out malaria as well as the insects. But no observations of bodies of men alike in age and condition, eating the some food, wearing similar raiment, performing the same duties, etc., have shown, at least so far as I know, that a difference of residence of less than one hundred feet from the banks of a stream will make a difference in the number of cases of sickness occurring on the *same* days."

Dr. Newton's assertion that "the malarial virus must, *as has often been pointed out*, lose its potency in the air," needs proving. The authorities for this statement are not quoted. Again the assertion that the cold "northern" or north wind brings the malaria and not the prevailing or south wind, is directly opposed to my observations at Fort Elliot, in the Texan Panhandle, not far from Fort Sill, but located in what may be considered a healthier climate.

My observations induce me to believe that the malarial virus is collected by the northern or southern winds and by them conveyed as far as from one to one hundred miles, or even further, and that these germs collecting in barracks or camps or deposited in suitable locations, develop and exert their poisonous influence on those whose condition offers the most favorable field for culture.[1] In the *Medical Record* of October 25, 1885, Dr. Geo. F. Shrady contributes an editorial concerning malaria, from which we extract the following:

"One of the most interesting problems in the whole range of medical science, and one which receives and deserves to receive the attention of some of the clearest thinkers of our day, is that presented by malaria in all its manifold and erratic manifestations. Although, fortunately, in this latitude, the pernicious forms of malarial fever are, while by no means unknown, of comparatively rare occurrence, yet no small part of the physical ills from which we suffer can be referred directly or indirectly to the action of this poison. And in many portions of the globe not less than one-half of the mortality is due to this cause alone. But aside from the large part which this disease plays in the causation of human suffering and death, it is of itself an interesting subject of study. There are few other infections which are so proteiform in their manifestations and so insidious in their progress as is the malarial, and it is equaled, if indeed it be equaled at all, only by the syphilitic and the tubercular. It is now very generally accepted upon the authority of Tommasi-Crudeli, Klebs, Marchiafava, and others, that the malarial infection is due to the entrance into the organism of a special form of lower life, a schizomycete. But we are still in the dark as regards the mode of action of this parasite, for no satisfactory explanation has yet been vouchsafed us of the characteristic periodicity in the symptoms of malarial infection, or of the irregular forms which it so often assumes."

In the *Medical Register* of July 9, 1887, Dr. H. G. Magée contributes an article on "Malarial Pneumonia" in which he states that pneumonia pure and simple has not the same pathognomonic symptoms that malarial pneumonia has. It is not so liable to run into typhoid conditions as the malarial form is. We have the same symptoms, so far as the pneumonia is concerned, but in the malarial form we have the periodicity so peculiar to malaria. For instance, if it is one that lasts long, we have the regular remissions every other or every third day, as the case may be. I know that there are some that deny the existence of a hybrid disease, but in this we have the symptoms peculiar to both. Malaria appears to be the predominating element. I have had in my practice this season some ten or twelve cases.

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[1] Dr. Wood states that "winds appear to be capable of carrying miasmata, either enveloped on clouds and fogs or otherwise, a *very considerable distance*.

In a paper by Dr. E. C. Wendt in the New York *Medical Record* Oct. 18, 1888, concerning the association of tuberculosis and acute pneumonia, he states that "if croupous pneumonia is an infectious disease, caused by the invasion of a specific micro-organism, and if pulmonary tuberculosis similarly depends upon the entrance into the lungs of peculiar bacilli, then it follows that the growth and multiplication of these two typical and vastly dissimilar varieties of germs within the same organ, so far from being mutually antagonistic, may be reciprocally stimulating, and thus prove doubly dangerous to the host carrying the parasites."

May we not infer from this statement, assuming that it be correct, that a theory of malarial pneumonia is a possible one, even if we are not able to claim successfully that the changes which take place in the blood corpuscles do not create a special form of pneumonia found only in malarial patients.

"Pneumonia comes, perhaps, next to dysentery as a cause of mortal- "ity among the victims of malarial poisoning. But like dysentery it is "rather by attacking those subject to malarial cachexia than as a compli- "cation of remittent fever that it becomes an important factor in increas- "ing the mortality in malarial regions. The pyrexia in these cases of "pneumonia in malarial subjects, as in other febrile affections, in such "individuals has a remittent or intermittent character. This has given "rise to the supposition that the pneumonia in these cases is of malarial or- "igin. * * *. As large numbers of individuals are often exposed simul- "taneously to the causes which produce pneumonia, sudden change of "temperature in combination perhaps with a special cause (?), a veritable "endemo-epidemic sometimes occurs in regions where malarial diseases "were extremely prevalent earlier in the season. The same climatic "changes which induce pneumonia in some of the victims of chronic "malarial toxæmia may cause a return of ague or an attack of remit-

“ Malaria and Malarial Diseases,” Sternberg, p. 287.

“tent fever in others, and pneumonia may in this case appear later as a
“secondary affection or complication of the malarial disease. The mala-
“ rial element, or rather the fact that the vital resistance of these cachectic
“individuals is greatly reduced by the effects of malaria, gives to these
“cases a gravity comparable with that of pneumonia in scorbutic sub-
“jects or the victims of crowd poisoning or of chronic alcoholism
“* * *. As in pneumonia, in scorbutic and alcoholic subjects, these
“cases in malarial cachectics are remarkable by the slight intensity of
“ the initial chill and of the pain. The expectoration is less viscous than in
“ ordinary pneumonia, and the crepitant râle is less dry. The reaction
“is so feeble that often dyspnœa and a hectic flush of the cheeks are
“ the first phenomena which attract the attention of the physician : as in
“ scorbutus and chronic alcoholism the pneumonia is frequently double.
“* * * By its gravity also, the pneumonia of these cachectic persons
“ approaches that of drunkenness and of scorbutic subjects. * * * Out of
“ six cases in persons suffering from malarial cachexia who were admit-
“ted to the hospital in November and December, 1865, in Rome, the mor-
“ tality was one-half.”

“ Traité des Fièvres Intermittentes.”

M. Colin, quoted by Dr. Sternberg, p. 287 et seq.

Juergensen (“ Croupous Pneumonia,” Vol. V., Ziemssen Cyclopædia, p. 121 et seq.) states that “ the complication of pneumonia with *malaria* is one of a group of complications in regard to which it is exceedingly difficult to form a positive opinion. He quotes Grisolle as follows : “ In the first place there are two forms of this complication which must be distinguished from each other—a simple coexistence of croupous pneumonia and intermittent fever, and a malarial infection localizing itself in the lungs. In the first case there is a mere complication, the symptoms run their course alongside of each other, and when the intermittent fever is cured by quinine the pneumonia, which still remains, continued its progress undisturbed. The malarial infection localizing itself in the lungs, exhibits itself according to Grisolle, as either intermittent or as remittent pneumonia, and both belong to the group of pernicious forms. These cases are characterized by the occurrence of pain in the side and bloody expectoration, coincident with the ushering in of the attack by an unusually severe and long continued chill. At the same time the physical examination reveals dulness of the percussion note and fine dry abundant crepitant râles sometimes mixed with blowing sounds.” (This is applicable to the case of a mulatto soldier under treatment at Fort Elliot, Texas, which proved fatal within three days (W. P.). “ These local symptoms continue through the hot stage of the intermittent, and then quickly subside, together with the fever during the profuse sweating, at least in the first and second attacks. If the return of the attacks is not prevented, the patients commonly die in the third or fourth paroxysm. The remittent fever is distinguished from the intermittent by the fact that *during the remission, a resolution of the local process does not always take place. In both forms the whole disease, including the pulmonary affection, may be controlled and perfect health restored by the use of quinine* (italics mine). (My own experience is very different from this, recovery being accomplished only when active energetic treatment is promptly given. The disease is usually rapidly fatal.—W. P.)

Further on he states that "it appears to be fairly well proved that a severe disease of the lungs may be produced by malarial poison, but it is by no means demonstrated that this affection is croupous pneumonia (!) The rapid disappearance of the local symptoms has repeatedly been urged as an objection. The way in which Grisolle sets aside this objection is perhaps a little too ex cathedra; he attaches but little importance to autopsies which are said to have revealed changes identical with those found in "legitimate" pneumonia; but he still strongly insists that the results of physical examinations are perfectly satisfactory. Until this pathological question is settled by satisfactory proof, *I beg leave to at least express a doubt in regard to the actual existence of a croupous pneumonia.*

"I believe that malaria has a much greater effect upon the progress of other diseases than we give it credit for, rendering recovery much more prolonged than we expected, giving rise to serious symptoms which give great cause for anxiety, and complicating the disease we have to treat. For many years I have noticed, both in hospital and in private practice, that when I have had to prescribe for certain diseases, a febrile state—I may say an unexpected febrile state—has complicated these diseases, giving rise, in my mind, to much anxiety as to the future progress of the patient."

"So convinced am I that the malarial poison is a great factor in the causation of anæmia and indeed often the sole factor, that wherever I have a case to treat or one of pernicious anæmia, I always make particular inquiries about the situation of the house in which the patient lives, and the presence of febrile symptoms."

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"Malaria is a very potent enemy of man, not only producing a disease or diseases of its own, but also influencing the progress of other diseases. Day by day we meet with patients who suffer from periodical headache, relieved by quinine. Frequently we see children wasting without evident cause, no tubercular disease anywhere, no rickets, no disease of any kind, but a febrile state of wasting. This state, without other evident cause, generally makes me look out for malaria, and if I find that exposure to it has taken place, I generally with confidence prescribe quinine and then removal, and but seldom have had occasion to regret the treatment adopted."

Dr. R. W. Thomas: "A Few Remarks on the Influence of Malaria on the Progress of Other Diseases."—*The British Med. Journal*, Oct. 17, '85.

In the *New York Medical Record* of Jan. 16, 1892, Dr. Arthur C. Brush contributes a valuable article on "The Blood Changes in the Malarial Fevers." He separates his case into three groups: *a*, "Those in which non-pigmented inter-corpuscular bodies alone existed; *b*, those containing the pigmented inter-corpuscular bodies, flagellæ and crescents; and *c*, those in which both kinds existed together." He concludes from his investigations, that the conditions described as malarial are due to the development of organisms in the blood. That the species of organism is not always the same in all cases, but that the different species often occur simultaneously. That it is due to this difference in species that the clinical difference in type is due. That a change in type is due to the subsequent development of a new species. That in reality we have two, if not more, distinct but often associated diseases, due to distinct but closely allied organizations. Is not this additional evidence to explain why in those who have presented malarial symptoms, pneumonia is so rapidly fatal? The prevalence of rapid and fatal pneumonias in malarial districts is without doubt due to these abnormal changes in the circulatory fluid. The blood is evidently deficient, in quantity and quality, in so many residents of western malarial sections. This we would naturally expect to find where fever recurs, and the intermission between one attack and another is so short. The system does not have time to recuperate. The disturbances in the digestive system diminish the amount of required nourishment, and the sustaining powers are not equal to the task of withstanding the attack of sudden coldness or of exposure in poorly constructed houses. We have then a more or less distinct type of malarial pneumonia, in certain districts rendered increasingly dangerous to life by reason of the changes in the general circulation and nutrition by more or less frequent attacks of malaria—zymotic pneumonia. If thus conclusions are correct, the treatment in all cases of malaria, should be to improve the circulatory fluids and to promote the normal action of the digestive system. Quinine is employed too lavishly and often without any professional advice. I have found this quinine habit remarkably prevalent along the Mississippi river in Minnesota, and through the lowlands and prairies of the west to the Mexican line.

Quinine is sold in bulk and used, with or without whiskey, in doses to suit the purchaser.

That quinine is valuable in these cases there can be no doubt, but in my experience it should be combined with iron. I have always used with benefit in malarial cases the following :

℞ Quinine sulph. F........ ʒ ss.
Tr. Ferri mur........... ℥ ss.
Syr. Simpl............... ℥ ss.
Aquæ ss. ad........... . ℥ vi.

M.—ʒ i. three times daily ten minutes before meals.

Nutrition is always given the most careful attention, something easily assimilated—like "*beef peptinoids*," beef extracts, etc. Hygiene of the person is particularly requisite—sponge bathing and friction with rough Turkish towels. This latter must be insisted upon to promote circulation. It is also important to recommend some attention to a good water supply, or to prescribe milk drinking. We find perhaps a popular notion that whiskey is an antidote and alcoholic liquors are, as is well known, freely used in malarial regions. This, aside from any temperance views in the matter, is all the wrong and does not aid in improving the quality or quantity of the blood. A generous supply of pure water is needed in these cases ; either native or imported waters must be recommended, and milk is particularly valuable. A free action of the skin and general attention to hygiene is to be urged. It may seem bordering on the absurd to speak of these things to men whose occupations and surroundings make such advice wellnigh impossible ; but as in many cases in the practice of physicians in cities and towns, hygienic measures will go further in effecting a cure than can be obtained by frequent dosing with drugs. On every hand we find attention to hygiene on the increase and dosing without hygiene is apt to prove unsatisfactory. The treatment of zymotic pneumonia must, of course, vary in individual cases. Promptness is of the first importance. Hot applications to the chest and legs. Hot drinks of beef extract, milk, either with or without brandy or whiskey. Applications to the chest should consist of moderately stimulating mustard plasters, to be followed by the generous use of sweet oil. Strips of cotton cloth supersaturated with warm sweet oil sufficient to completely envelop the chest are always indicated. I have found "Dover's tablets" more useful than "antipyretics" and these I use in as small and repeated doses alternately with quiniæ hydrochloricum, a preparation which I prefer to the ordinary sulphate or muriate.

Sustaining treatment, with careful attention to the hygiene of the house and of the sick room is, of course, indispensable. Pure air, but warm and moist. I have no faith in the saying that "a patient ill with pneumonia cannot take cold." Applications of ice or ice water, or the cold bath, so useful in the typho-malarial form, I never employ in M. pneumonia. Hygiene and good nursing are worth more than dosing, and in my experience therapeutics is of practically very little value. We cannot offer any reliable substitute for fresh air, sunshine, warmth and wholesome nutriment. We have seen cases regularly dosed where the patient seemed poisoned in his own room by the unhealthy air he was forced to inhale.

There is a time, in the treatment of malaria, which will if properly improved send the patient forward into a safe harbor, where neglect or irrational treatment will reduce him so miserably that upon the onset of even a moderate attack of pneumonia he will rapidly succumb. We find quinine pills and purgatives too frequently given with disastrous results where sustaining treatment would have been instrumental in saving life.

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ORIGINAL FRENCH TRANSLATION.

THE TREATMENT OF TABES.[1]

By Prof. Leyden. Translated for Gaillard's Medical Journal by H. McS. Gamble, M.D., Moorefield, W. Va.

I am now going to consider some surgical methods which I shall describe rapidly, but which I desire to speak of for the sake of completeness. It is to this category that belong Langenbech's method of stretching the nerves (1887), Motschutkowski's method of suspension, employed about 1883 and brought to the knowledge of all by Charcot in 1885, and the latest blossom of this tree, the Bonuzzi method.

Professor Benedict has described this latter method in the *Wiener Med. Presse* of January 3, 1892. He has added to it an illustration that enables you to see what it is. You see the poor patient in an unenviable position which he endures willingly, because he has been promised an amelioration of his affection. Benedict lauds this method because it possesses the double advantage: 1st, of requiring no apparatus; and secondly, of being incomparably more energetic in its mechanical and therapeutical action than suspension. For my part I consider suspension quite energetic enough, and I feel little temptation to employ the new Italian method of treatment.

Finally, I am not very much of a partisan of the surgical and mechanical treatment of tabes. The first process discovered, stretching of the nerves, has not maintained itself; but its inventor, our esteemed colleague Langenbech, has been accorded the merit of exercising a vivifying influence upon therapeutical researches and of creating new ideas. The most commendable way, I will even say the most elegant, which pertains to the idea of stretching the nerves, is unquestionably Motschutkowski's method of suspension. Although we cannot expect positive success from it, yet it is still tried here and there, and applied prudently it is devoid of any inconvenience. Recently a patient in the first stage of tabes reported to me that he had been relieved by suspension of his gastric paroxysms. I cannot help believing that the pulling practiced upon the vagus nerve or of the spinal cord was the active factor in this amelioration, but I also assign great importance to the encouraging and stimulating influence of hope, for it seems to me, from what I have heard, that the prescribing physician carried out the process with great precautions and with prudence and persistence, and that the fact that the physician as well as the patient believed in the efficacy of the method has perhaps also contributed to the result.

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[1] Continued from the September number.

I have to say of the orthopedic treatment, and especially of that of Hessing, what I have said of the surgical treatment. I have no objections to make, when one does not go so far as to treat with the corset all the diseases of the spinal cord, or does not make all paralytic conditions depend upon the fact that the vertebral column is too long or too short, too strong or too weak. It would be dangerous, above all, outside of the medical world, to have the results obtained by orthopedic or similar means extolled as extraordinary curative successes. In this city, we have heard improved conditions spoken of which by no means exceed what was formerly obtained. But I willingly admit that the orthopedic treatment contributes occasionally to therapeutical success.

I come now to a mode of treatment to which I would freely attribute a great value both in theory and practice, and that is the gymnastic treatment, but understood in a broad sense. Conducted methodically for this special object, and aided by dietetico-hygienic rules, it constitutes an important therapeutical process that I will frankly call compensative therapeutics.

In many cases in which the generating anatomical lesions of the disease cannot retrocede, it is still possible to more or less attenuate their ill effects. Complete and lasting attenuation of the symptoms would be equivalent to a cure, without either the process or the anatomical substratum being modified. Nature itself gives us numerous examples of such attenuations. I refer you to the remarkable memoirs upon compensation, that Prof. Nothnagel published some time ago in the *Zeitschrift für Klinische Médecin*, and to the corresponding remarks of his discourse upon the limits of the art of curing. In examining the conditions pertaining specially to them, one easily forms an idea of the great importance of these compensations in diseases, and the physician ought here again seek to surprise the secrets of nature and to follow her methods. Compensative therapeutics ought, in this sense, to become a very important help and one to which we ought to have recourse with a better understanding than formerly of the object in view. It already plays at the present time an essential rôle in the therapeutics of cardiac lesions, and, especially, of ualvular lesions. In this case the real cure of the anatomical process is rarely accomplished, and the more frequently by chance alone, that is to say owing to favorable conditions upon which we cannot depend.

I do not call that compensative treatment which seeks to suppress the disease in its localization, but that which develops or fortifies the forces which are in a condition to diminish or to suppress the existing pathological functional disorders.

As regards tabes, then, compensative therapeutics does not signify that we set up the claim of influencing the anatomical process, but that we seek to attenuate or even to suppress its effect, that is to say the functional troubles, which properly speaking constitute the disease, and to reinforce and fortify the attenuating forces, notably the function of the muscles. In my *Clinique des Maladies de la Moelle* (Bd. 2, page 761. 1876) I made the following remark: "It must also be remembered that powerful muscles are in a position to compensate a part of the ataxia; it will be observed that women more easily reach the paraplegic stadium than strongly muscled men. This is why everything ought to be done to fortify and reinforce the muscles. It is therefore bad practice to confine patients to the bed." I still remember a tabetic patient in my clinique at Strasbourg, who came to us almost paraplegic; he could neither walk nor stand, he had been kept in bed for several months. After treatment for three months, he left the clinique, walking with a cane, a success which may at least be ranked with that obtained by treatment with the corset, which is far more highly lauded.

In my work upon tabes in the *Real Encyclopædie d'Ealenburg*, I have developed more at length the idea of compensative therapeutics, and, at the conclusion, I have written as follows:

"A compensation of the effects which result from the anæsthesia is not impossible, even if the symptoms persist without modification. I consider the idea of the possibility of a compensation of the ataxia as legitimate."

The possibility of such a compensation and the justification of a compensative therapeutic course in tabes are closely associated with conception of the pathological physiology of this disease, and I must recall the fact that the theory which I have advanced has shown itself fruitful in that it has directly demonstrated the possibility of a compensation. When I show the ataxia to be dependent upon the anæsthesia, there results the possibility of correcting it, not only by ameliorating the sensibility directly, but also by ameliorating the elements that compensate it. I have mentioned as such the sight and muscular activity; I have earnestly shown how the symptom of Romberg is explained, which consists in the exaggeration of the ataxia when the patient walks with the eyes closed. Observation every day shows that tabetic subjects watch their steps very closely by the help of the eyes, especially when walking is difficult; for example, upon the pavement of the streets. The muscular force also possesses a great importance; the better it is preserved, the more the ataxia is compensated; the weaker the muscles are, the feebler is the energy of the will and the more manifest is the ataxia.

The following are the elements of the compensative therapeutical method, which is considerably aided by general therapeutics. Atonic alimentation, psychical encouragements which furnish the pleasures of hope and maintenance of the energies—these are the things necessary in order to succeed. It is in this way that one will obtain, I believe, all the amelioration within the bounds of possibility. The result to be obtained in each particular case depends not only upon the direction of the cure and the ability of the physician, but also upon the will power of the patient, upon his surroundings, and upon the influence that one will be able to exercise over him.

Frænkel, in a remarkable memoir upon the therapeutics of the ataxic disorders of movement (*Munch. Med. Wochens.*, 1890, No. 52), has proposed a method which is nearly allied to the compensative therapeutics, and introduces a new element-exercise. I beg you to read the particularities of this ingenious process in the little brochure that furnishes the proof of the activity of this therapeutic means for the improvement of the handwriting of the patient so treated. By a number of ingenious appliances which Frænkel had the kindness to show me, he has modified and multiplied the movements of the arms and legs in the most useful manner. The results are very remarkable. They possess the advantage of being obtained by a treatment that rests upon scientific studies, but they demand, like everything good, much time and labor. One of my oldest tabetic patients, whom I saw for the first time in 1872 at Strasbourg, has passed through a course of treatment with Frænkel by my advice, and that with a very satisfactory result. This patient is an evidence in favor of my personal opinion; he shows that with a good deal of patience and confidence we can accomplish a great deal in tabes.

When I saw this gentleman in 1872 for the first time, at Mannheim, I found him in a desperate state, so that his family expected his death almost every hour. This grave condition arose from the fact that the patient, a tabetic, whose sufferings were exquisite, had become a morphomoniac in consequence of this neuralgic pain. The embarrassment was very great because these pains rendered the continuance of the injections necessary, and they no longer knew how to be of any assistance to him. I advised a discontinuance of the morphine, which was accomplished, you understand, only with the greatest difficulty and with the gravest phenomena. This patient, who was then at death's door, who could not take one step, recommenced to walk and to conduct his business as a merchant; he has sometimes suffered pain since then, but to a supportable degree.

Twenty years have now passed ; the patient has continued his occupations without interruption, he has supported his family and has begotten several more children. Nevertheless, the tabetic process has advanced little by little, but very slowly. He has had laryngeal attacks which have again ceased ; he has had a kind of angina pectoris, but that has passed away. With the lapse of time he has become a little indolent ; as we cannot ask him to promenade much at Mannheim, the result is that he has become unaccustomed to walking and usually travels in a carriage ; he has faithfully followed my advice in regard of all the new remedies pertaining to the therapeutics of tabes. Thus he has successfully had himself subjected to stretching of the nerves, to suspension and to a trial of orthopedics. Recently he has been under the care of Frænkel and has returned with a good result of his methods, since he has learned again to stand erect and to walk alone. He has lost at home a part of what he had gained, but the consciousness of the possibility of an amelioration has left him a great encouragement and a great pleasure in living.

The general treatment is, besides, of great importance, chiefly good nourishment, thanks to which the functional capacity of the muscles gains much. Under this head I have yet to add to what I have already said that, although the ataxia, as you know, proceeds from the disorders of sensibility, it does not progress parallelly to the latter. Allowance being made for the errors inevitable in their investigation, it must be inferred from the fact of other elements contributing to increase or to diminish the ataxia that we ought to seek for them partly in the attention to exercise and in the strength of will.

In tabes the muscles are not always intact, as was admitted in the beginning, but they participate to the most diverse degrees in the pathological process. The works of late years have taught us that peripheral neuritis may accompany tabes, and that it may affect the sensitive as well as the motor nerves; that this neuritis is capable of amelioration by suitable treatment will not seem doubtful, even if one cannot admit the certainty of success. The principles by which we ought to be governed here are, in my opinion, the same as those which I have advised for the treatment of multiple neuritis. They are borrowed essentially from dietetico-hygienic therapeutics aided by electricity and gymnastics. It is certain that this mode of treatment will find its indications even in tabes and that its results are to be seen.

General treatment is not to be neglected. I have already remarked that the compensative method does not rest solely upon gymnastics and exercise, but that it is based essentially upon general physical and psychical tonification, and I should also say that I place great value upon a rational alimentary system of therapeusis for patients. He who desires to have muscular strength and courage ought to be well nourished, and when we leave patients to despair at home surrounded by those who are dear to them, as often happens, according to the opinion of Romberg they become, as we see in the case of many of them, ill looking, thin; they are attacked with muscular atrophy, with pains, with vesical troubles, etc. They degenerate morally; they fall into the hands of quacks, so that at last nothing more can be done for them. We ought then to endeavor to tone up the physical as well as the psychical forces; with this aim one should make use of all the means of practical therapeutics, that give to the patient courage and constancy to persevere in a sensible therapeutical course, which can only give slow results.

Complications form a considerable part of the pathology and therapy of tabes. It is not my purpose to speak of them at length. However, I may say that their treatment ought to be interpolated into the general plan. The most important complications, and those which give us the greatest anxiety, are the neuralgic pains and the intestinal paroxysms. The neuralgic pain renders life extremely sad to many tabetic subjects who, without that, would have patiently borne a moderate degree of their disease, and it is exceedingly difficult to treat them successfully. I will only say a few words about frictions, about topical applications; almost every patient and physician employs that to which he is most accustomed. I have, at this moment, a patient who uses cold applications; another bears cold applications badly, and he uses warm ones. I am not in a position to establish the principle according to which one ought to be governed. I am guided, in fact, by what the patients have experienced themselves. But I would like to repeat again that, in my conviction, the treatment of these neuralgic pains by morphine leads to difficulties. It is the easiest of all; the patients are delighted at first moment, but the pains return; the morphine is continued, and all the patients infallibly fall into morphinism, and morphinism prevents them from knowing, in their state of excitation, whether they have pains or not.

I am treating, at this very time, a tabetic gentleman whom I cured of the morphine habit ten years ago, in a private hospital. He takes every day in its place 2 grammes of chloral and 1 gramme of phenacetine; the result is that he finds himself in a state, in truth, supportable, and that he is quite content; but he sleeps, in general, little at night, and, in the daytime he is without moral strength; he has abandoned his occupations and almost every kind of work. It is the destiny of these patients, while many who make an effort to gain control of themselves, like my patient at Mannheim, are freed from the pains entirely or for the most part. I make it a rule to let matters alone and to persuade patients to stand firm. The faculty of supporting pain has its limits. I cannot say much in favor of all the remedies that have recently become common as anti-neuralgics, such as phenacetine, antipyrine, exalgine. Sometimes, however, they ought to be used, inasmuch as they do not produce a habit to any extent. Chloral and sulfonal possess no real advantage, and patients become habituated to them almost as much as to morphine.

The gastric crises constitute the greatest difficulty in the way of treatment. One may, in a temporary manner, calm them by morphine and such remedies; the patients are extraordinarily grateful for the relief. When the paroxysm has passed they go along well again; but, unfortunately, the paroxysms always return after a while and they become more frequent and more intense; the patients decline, they lose all courage and all vigor, and they anticipate death. If in severe cases morphine is given to them without limit, they are lost. This is why I am extraordinarily reserved in the use of this remedy. When we have to deal with light attacks, the case is not so bad; but, when the paroxysms are repeated, it is this complication that, according to my experience, threatens life above all, and I have seen a number of patients succumb subsequently to these attacks by progressive emaciation. Their treatment demands prudence and an extraordinary persistence, and I know of no other than a carefully regulated, provident, prudent and yet strong alimentation in the free intervals, in such a way as to arrest the progressive emaciation and to enable the patient little by little to regain some strength; sometimes we see the attacks become milder with the increase of strength. I have seen and treated a great many of these cases at the Charité and in my private practice. I do not wish to detain you with a description of them; I only desire to make a few remarks. The prodigiously rapid changes in the weight of the body are very surprising. In a few days the patients lose in an attack of gastric paroxysms 6, 8 and 10 pounds, and when the attacks last ten days they have lost 10 to 20 pounds. Then they gain rapidly, but never as rapidly as they have lost. It is evident that when a subject has lost 20 pounds in a long attack which has continued two weeks, which is repeated, and which cannot be arrested, his strength soon reaches the last degree of exhaustion, and he succumbs to inanition.

In closing, I have two other points to touch upon:

Prophylactic treatment cannot consist in preserving everybody from tabes. No one can fortify himself against thousands of possible diseases and even the best sanitary regulations can do nothing therefor. We can only advise a rational mode of living equally remote from unreasonable frivolity and from unjustifiable anxieties. Prophylaxis is more directly indicated when the disease presents itself in the first stages; the problem then arises for the physician to arrest the disease. This cannot be promised with certainty; but it is well to recommend to the patient a somewhat prudent mode of living remote from over indulgence and excess; he will have to provide against sudden variations of temperature by avoiding humidity and cold, especially to the feet. I leave it to the judgment of the physician to do whatever is necessary without causing the patient disquietude.

Allow me to touch upon a question that does not really belong to therapeutics, but to the study of the medical art. Are we obliged, and to what degree, to give the patient details as to the nature of his disease? Are we authorized and compelled, and to what degree, to conceal the truth from him? No general rule upon this delicate question can be given. The answer is reserved to the tact of the physician, and I believe the latter will find the correct note if he allows the well being of his patient to guide him in his conduct. It is the duty of the physician to cover the cruelties of reality with the veil of hope.

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SELECTIONS.

THE PRESENT STATUS OF THE SURGERY OF THE VERMIFORM APPENDIX.

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The achievements of modern surgery are the just pride of our profession; they have won for it and us the admiration and gratitude of mankind. Even in this wonderful age of mechanical invention, it is safe to say that in its proper sphere, the alleviation of suffering and the preservation of life, surgery has not been surpassed in marvellous progress. Ether, chloroform and cocaine have already saved millions of beings from untimely death and are destined for all time to compound the sum of human health and happiness. Who can compute the ultimate results of the work begun by such men as Ephraim McDowell, Marion Sims and Joseph Lister. Genius like that of Watts and Fulton; Stephenson, with his "bottled sunshine;" Morse and Vail and Henry; Whitney, Howe and Hoe, Bell and Edison and others, may justly claim the tribute of man's admiration; but to Simpson, Morton, Long, Jackson and Koller, and the other great discoverers in our art, with an equal admiration, he adds that fuller measure of his gratitude.

One need go no further than the subject of this paper for a demonstration of the rapid progress in surgery. The morbid anatomy of the appendix vermiformis has only recently been understood, and with this knowledge came at once the great improvement in the operative treatment of its lesions.

The name of Dr. Simon Baruch, of New York City, should, in my opinion, stand prominent in the list of those to whom we are indebted for this very important advance. It was from a case in his practice that on February 8, 1888, Dr. Henry B. Sands reported to the New York Surgical Society "*An account of a case in which recovery took place after laparotomy had been performed for septic peritonitis due to a perforation of the vermiform appendix.*"[1] The patient, a lad, was under the care of Dr. Simon Baruch of New York, a physician not only of large experience and unsurpassed skill in diagnosis, but a man who possesses the courage to carry out what his judgment affirmed. Dr. Baruch saw this patient on December 29, 1887, at 8 A.M. Since the previous afternoon he had experienced considerable pain in the lower abdominal region which grew worse in the night, the increase of pain being accompanied by several attacks of vomiting. The right iliac region was exquisitely tender to the touch, the balance of the abdomen only tender on deep pressure. Slight tympanites. Pulse 120, respiration 36, temperature 102° F. A turpentine enema was ordered, and all food and drink withheld. Poultice to lower abdomen. 1 P.M., pulse 120, respiration 30, temperature 101°. Pain relieved by poultice and emptying of lower bowel by enema. Ordered small quantities of beef tea. 8 P.M., pulse 116, respiration 30, temperature 101.4°. Patient comfortable.

At 8 A.M., December 30 (the second day), pulse 130, respiration 30, temperature 101.6°. Had taken five ounces of beef tea, two ounces and a half of milk. No vomiting or nausea and local tenderness lessened, tympanitis increased, dullness on percussion over region of appendix. Despite the absence of pain, nausea and vomiting, and the patient's expression of being comfortable, Dr. Baruch, basing his opinion on increased pulse rate and tympanites, the continuing exquisite, sharply defined tenderness and localized dullness, decided that the time for action had come and called in surgical aid. No tumor could be felt by rectal examination or by direct palpation.

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[1] N. Y. Medical Journal, February 8, 1888, p. 197.

Operation at 4 P.M., forty-eight hours after the onset of the attack; ether; vertical incision over the region of the appendix. Tissues just beneath the skin œdematous, peritoneum thickened and opaque, on its incision a small quantity of gas and about an ounce of fetid pus escaped. The peritonitis was not general, was evidently recent, spreading and severe. A spherical fœcal concretion about a quarter of an inch in diameter was found lying free in the peritoneal cavity. A similar concretion had partly escaped from an opening at the commencement of the vermiform appendix, which was not gangrenous. The margins of the opening were freshened with scissors and brought together with silk sutures. The diseased parts were irrigated with warm water (about 105°) and afterward syringed out with half a pint of 1-1000 bichloride solution, the upper part of wound closed, the intestines walled off with iodoform gauze, the wound packed with the same material; bichloride gauze and cotton over this. The temperature fell within an hour to 98.5° and convalescence was uninterrupted.

I have reported this case at length, not only on account of its historic value—for it was the first case in which the operation had been done after a diagnosis of perforation of the appendix, which attracted the attention of the profession at large—but the history of this case is important since it is practically the history of those cases which demand immediate surgical interference.

A proper conception of what we once termed "perityphlitis," now properly named *appendicitis* or *peri-appendicitis*, will depend upon a careful consideration of the anatomy of the organ in question. Quoting from Quain is this description: "Coming off from the inner and back part of the cæcum at its lower end is a narrow round and tapering portion of the intestine named the appendix cæci or *vermiform appendix.* The width of this process is usually about that of a large quill, or rather more, and its length varies from three to six inches; these dimensions differing much in different cases. Its general direction is upward and inward behind the cæcum, and after describing a few slight turns it ends in a blunt point. It is retained in its position by a small fold of peritoneum which forms its mesentery. The cæcal extremity is hollow as far as its extremity, and its cavity communicates with that of the cæcum by a small orifice sometimes guarded by a valvular fold of mucous membrane."

Of course, the anatomical relations of this organ vary from this most frequent position, but in the large proportion of subjects the above relation prevails.

In this unfortunate position it cannot escape many accidental lesions. Its lumen communicating with the great pouch, the largest part of the alimentary canal, into which is being poured during a good portion of the time semi-liquid ingested matter, and various undigested particles under considerable pressure, no matter what position the subject assumes, it is no wonder that these contents find their way into this organ. Once in, the tendency is to remain; for this diminutive process has little peristaltic power to empty itself. Hence by pressure of solid particles or by fæcal enteroliths formed by partial evaporation of the liquid contents, ulcers are formed and perforation, more or less rapid and complete, may occur with escape of gas or other contents, or without perforation inflammation may be instituted, which spreads through the walls and fires up the peritoneum in immediate contact. Moreover, pressure of the overlying and usually filled cæcum directly upon the appendix must be an additional factor in the interference with its proper nutrition and the resulting breaking down.

Again, when distended with gas, or even when empty and small, such is its unfortunate position that this pressure may shut off a proper blood supply and cause gangrene, general or localized. Pressure is undoubtedly increased in the sitting posture, and this may, in part, account for the frequency of appendicitis in those of sedentary habits.

From the above we can satisfactorily explain all the various lesions which are found post mortem or during operative exploration, from the mild catarrhal inflammation of the lining membrane to the deeper process spreading without perforation to the peritoneum; the general rapid gangrene of the entire organ with rapidly developing peritonitis, rupture and collapse; the slow perforation by direct pressure of a foreign substance; and ulceration and perforation as a result of local gangrene in an appendix either empty, or containing only a small quantity of gas.

Catarrhal appendicitis is the simplest and most innocent variety. The symptoms vary with the intensity of the catarrhal process and with its recurrence. Pain is usually mild, fever not present, and tumefaction or local abdominal resistance absent. When the inflammatory process involves the entire wall of the appendix and the peritoneum is commencing to be involved, pain becomes a more prominent symptom, tenderness localized on direct pressure with the point of a single finger is evident, abdominal resistance is noticeable, adhesions occur as the peritonitis extends, agglutinating contiguous surfaces and happily hedging in the commencing suppuration and abscess; septic fever, tympanites, and increased pulse follow as a rule, varying with the intensity and rapidity in the spread of the inflammation.

General gangrene of the appendix is the most formidable of all these lesions, and death may ensue within a few hours, such is the suddenness of the onslaught and the rapidity of the gangrene, and even before rupture, such is the widespread peritonitis produced and consequent shock and collapse.

In *local gangrene* and *ulceration* the general peritonitis may be prevented by fortunate early adhesions, but the perforation is usually sudden enough to permit the escape of gaseous or other contents, with rapidly developing peritonitis.

When foreign particles find lodgment in the appendix they may produce a mild form of inflammation, recurring with varying frequency (recurrent appendicitis), causing adhesions, the attacks gradually increasing in severity until either symptoms of obstruction are present or abscess and general peritonitis ensue.

It seems to me that a better understanding of these various forms of appendicitis and the indications and methods of treatment may be arrived at by the study of certain cases in each group.

It is to the rapid perforation and the gangrenous forms of appendicitis that the greatest importance attaches. Of the former I have narrated one case. Allow me to give the history of a second patient, in which I was personally interested. You will find it reported by Dr. Baruch in the *Medical Record* for April 30, 1892. This gentleman was called to Long Branch, New Jersey, to see a lady about thirty-five years of age who, twenty-four hours before, had been seized with a severe pain in the right iliac region. She had been treated for peritonitis by the administration of Rochelle salts and morphia. He found her with a temperature of only 100°, finger tips and nose and ears cool, anxious countenance, rapid pulse and respiration. There was exquisite tenderness over the anatomical location of the appendix and localized dullness on percussion. The critical condition of the patient was diagnosticated and operation urged. I saw this patient about midnight; it seemed imperative to operate and this was done at once. On cutting through the peritoneum over the region of pain and dullness and pushing aside one or two loops of small intestine which presented, a small quantity of pus (about two drachms) was seen at the base of the cæcum. A nodular and inflamed appendix was found containing a fæcal concretion, whose sharp edge had perforated the appendix. Recent fibrinous exudation (with slight adhesions) and pus mixed with bubbles of fetid gas were found in the vicinity. The pus was carefully sponged away to avoid its diffusion as the operation was proceeded with, the appendix was carefully dissected out, tied one-fourth of an inch from its junction with the cæcum with a strong silk ligature, divided and removed. The stump was rendered aseptic by rubbing it thoroughly with a bichloride tablet. The pelvic fossa was carefully cleansed with warm water and dried out with sponges. The intestines were walled off with layers of iodoform gauze, the wound closed above, and the remainder filled with the gauze ; a dressing of sterilized gauze was applied over all, with slight compression.

Pulse, respiration and temperature fell within one hour, all symptoms of shock passed away, and the patient made an uninterrupted recovery.

In *gangrene* of the appendix the symptoms do not differ materially from those in perforation of this organ. The following may be taken as a typical case. It occurred in the practice of Drs. Walker and McBurney, of New York. A man, fifty-six years old, heavy build and in excellent health, was seized quite suddenly at 9 P.M. with nausea, vomiting and general abdominal pain. His temperature remained at 100° until evening of next day. Forty-eight hours after the onset of the attack the abdomen was moderately distended, rigidity of right abdominal muscles was highly developed, and great tenderness on pressure was noted at the ileo-cæcal upper region. He had the gray, tired look of commencing sepsis. Within two hours the temperature had risen from 100° to 102.5°, the pulse was full and bounding. At midnight, fifty-one hours after the attack began, the operation was performed. The appendix, curved like the letter S, five inches long, as large as a man's thumb, extremely distended with soft fæces and completely gangrenous, was found lying to the outside of the ascending colon well in the loin. It was not perforated and there was no pus. The usual toilet and dressing was done and the patient recovered.

Subacute and *chronic*, or *recurrent appendicitis.* Two following cases will, I think, suffice in the study of this group.

In April, 1890, a young man about twenty years old came to me from Dr. Ground, of New Hampshire. He had had twelve attacks of appendicitis in eighteen months. They had varied in intensity, were generally not severe. There was always pain in the right iliac region, abdominal tension (often mistaken for tumefaction), and occasionally a temperature as high as 101° F. He was incapacitated for work from one to two weeks during each attack. While preparing him for operation an attack came on with the usual symptoms of other seizures. It sub-

[1] Medical Record, April 6, 1892, N. Y., p. 424.

sided in ten days, and I then removed the appendix which was adherent to the iliac fascia. The peritoneum was thickened and there were numerous adhesions about the cæcum. The appendix was not more than one inch in length, about three-eighths of an inch in diameter, was empty and not inflamed or seemingly diseased. The patient recovered promptly and has not had an attack since that date, notwithstanding the character of his work, which is that of a porter at a hotel.

A young man in excellent general condition had within six months prior to January, 1892, three attacks of pain in the right iliac region. A month after the last attack I examined and found the *tender point* and a well defined swelling about as large as a walnut. I operated on this case and found a small distended appendix, thickening of the peritoneum with adhesions forming the tumor which had been recognized by palpation. Dressing as above and uneventful recovery.

When appendicitis occurs in which the inflammation extends gradually, yet steadily through the walls of this organ, involving the peritoneum, adhesions rapidly occur, and suppuration being established, the pus is circumscribed or walled off from the general peritoneal cavity and produces the usual symptoms of abscess, along the localized or general peritonitis. In this variety there are not present the symptoms of shock which characterize gangrene, perforation or rupture of a peri-appendicular abscess. Though less dangerous, these cases require unremitting vigilance. It is true that in many instances resolution occurs, even after well marked tumefaction is present, with fairly high temperatures, tympanites and local peritonitis, but I do believe in these cases the tumefaction is chiefly due to localized muscular tension and to limited peritonitis with adhesions rather than to abscess. In these cases of gradually developing peri-appendicular abscess the surgeon should be prepared for operation in the first few days of the attack. The sharply defined limit of tenderness, increasing swelling and muscular resistance, persistent high temperatures (101° to 102.5° F.), and tympanites, all point to increased formation of pus and strongly suggest operative interference. If all such cases were thus early operated upon, the general mortality after peri-appendicular abscess would, in my opinion, be greatly decreased.

Within the last few months I have seen three such cases perish from rupture of the abscess between the seventh and tenth days from the first symptoms of the attack, and in each of these the conditions were very favorable for operation after the abscess was well advanced. In one, operation was advised on the fifth day but declined. The patient died from peritonitis and collapse on the tenth day. An enormous abscess filled the right ileo-cæcal region and had ruptured. In the second case, on the night of the eighth day the patient "felt something give way;" collapse ensued, and as he was moribund I declined to operate. He died in two hours.

In the third case, on opening the abdomen fetid pus was found in the general peritoneal cavity, and although a careful toilet was made he died in five hours. His condition was considered desperate and almost hopeless at the time of operation, which had been too long deferred.

In cases of suspected abscess I do not think we should use an aspirating needle in exploration. It may be followed by serious consequences. When the symptoms point to pus accumulation, the most surgical procedure is to cut down upon the swelling. If adhesions have occurred and you get directly into the abscess, the treatment is the drainage tube and irrigation with Thiersch's solution. If the general peritoneal cavity is first entered, the abscess can be readily recognized and located by enlarging the incision in the abdominal wall if necessary. Rather than risk the escape of pus into the peritoneal cavity, a posterior opening should be made, entering the abscess through formed adhesions and draining out from behind. The anterior incision facilitates the entrance to the abscess from behind. The anterior wound should be closed throughout. If only a very small pus sac is found it may be opened, its contents sponged out, the cavity scraped and cleaned with sponges, rinsed with 1-1000 bichloride solution, and the wound packed with iodoform gauze. No posterior incision is indicated here.

When an abscess has burst into the general cavity, a thorough and careful toilet should be performed, everything sponged out dry, especial attention given to the pelvic cavity. Iodoform packing is demanded.

Operative Technique in the Removal of the Appendix.—An incision about five inches long is made through the abdominal wall parallel with the linea alba. The center of this incision should be about one-half of an inch below a line drawn from the anterior superior spine of the ilium to the umbilicus. All bleeding should be stopped by ligature before the peritoneum is opened. When this is done any loops of small intestine which may protrude should be gently pushed toward the median line and held away by sterilized gauze napkins. The cæcum is readily seen, and may be recognized by the longitudinal band, which, if followed downward, leads directly to the appendix. Should no adhesions be found, the end of the cæcum may be slightly lifted and thus bring the appendix into view, when it can be dissected from its peritoneal attachments commencing at the apex. About one-fourth of an inch from its junction with the large intestine a strong silk ligature is applied around it, and the appendix cut away with the scissors from one-eighth to one-fourth of an inch beyond the ligature. The end of the stump is rendered aseptic by thoroughly applying over its cut surface a solid tablet of mercuric bichloride. The ends of the ligature are cut off close to the knot after the toilet of the peritoneum. A piece of rubber tissue protective, disinfected by immersion in 1-5000 cool bichloride solution, is now placed so as to wall off the small intestines from the stump, and against this tissue is placed the iodoform gauze which fills the wound and projects to the surface through its lower one or two inches which is not closed by sutures. The rubber tissue is used because it does not adhere to the intestines as does the gauze. The upper remaining portion of the wound is closed as after an ordinary laparotomy. This dressing may remain for from three to ten days, preferably about seven days, when the gauze and tissue protective are pulled out, the wound irrigated with 1-3000 bichloride solution. A small strip of iodoform gauze or a soft rubber tube may be carried down to the bottom of the wound to insure drainage, and this finally removed in another week or ten days. For fear of ventral hernia the patient should keep in bed for four or six weeks, to permit the lower part of the wound to close by strong cicatricial adhesion.

When adhesions between contiguous loops of intestine and the appendix or cæcum are met with they should be carefully separated, and upon the discovery of pus or extravasated matter, this should be mopped out with sponges, taking care to prevent, if possible, the contact of septic matter with the general peritoneal cavity. The use of sterilized gauze napkins may aid in walling off the general cavity.

When the appendix is gangrenous or greatly distended, or has already been perforated, very considerable care is essential in dissecting it loose, either to prevent rupture or to avoid the escape of its contents.

When a large agglutination is encountered and the presence of a large quantity of collected pus is evident, it is safer to use the anterior incision which led to this discovery as a guide to the entrance of the abscess from a posterior and retro-peritoneal incision through which drainage can be effected. The anterior wound can then be closed throughout by sutures (if not contra-indicated, I prefer good sterilized silk for sutures) passing through the skin, and carefully going through each layer of fascia and muscles, and the abdominal peritoneum at least one-fourth of an inch from the cut edge of the peritoneum.

When a general toilet of the peritoneum is indicated, I prefer irrigating this cavity with sterilized water (just boiled and allowed to cool down to about 100° F.). This is carried in from an elevated irrigator through a stiff blunt gutta-percha tube (boiled before using). As the general peritoneal cavity becomes filled the fluid flows out through the opened wound. The remainder is sponged out until the cavity is dry and clean. I have once made a second opening in the median line in order to drain the deep pelvis. This is rarely indicated.

In conclusion it may be said that, contrary to former teaching, so-called perityphlitis and perityphlitic abscesses are intra-peritoneal lesions. They seemed to be retro-peritoneal after adhesions had taken place.

SOME POINTS IN THE PROPHYLAXIS AND TREATMENT OF PUERPERAL FEVER.

By Glynn Whittle, M.A., M.D. (Cantab.), M.R.C.P., Physician to the Liverpool Lying-in Hospital.

The existence of feverish symptoms in a lying-in patient prior to, or at the time of, delivery generally depends upon exhaustion, the patient being worn out from continued delay, the labor running an unfavorable course. In these cases the fever is not septic, but will become so unless promptly and effectually treated.

One of the commoner causes of delay in the second stage of labor is inability of liquor amnii to escape after free bursting of the membranes on account of the advancing head completely filling the vagina. This retention of liquor amnii seldom leads to more serious results than simple protracted labor, but may do so if there is rigidity and the head is tightly impacted. I have seen this condition cause patients to become feverish from sheer exhaustion, due to the continued delay, considerable traction with the forceps being necessary to effect delivery. These patients being feverish at the time of delivery, great care was necessary to prevent the cases from developing into septic fever.

Finding various catheters, intended for drawing off liquor amnii, useless in difficult cases of this description, I conceived the idea of having a special one made, which should be free from the objections which condemned the others. This instrument I have found successful in drawing off the liquor amnii, when it could not otherwise get past the head. The time for using it is when the the head is low in the vagina. To expel the liquor amnii a bandage should be passed around the fundus, and its ends firmly held during the pains.

The strength of the catheter will probably arrest attention equally with its general shape, which resembles the lower blade of the forceps without the lock. Resisting power is essential in the construction of such an instrument, and a necessary protection for the patient, inasmuch as it enables the operator to conduct his manipulations with the maximum of gentleness and the minimum of force. The object of the shape is threefold—(1) to increase the strength and thus prevent bending; (2) to avoid injury to the child; (3) to enable the instrument to be passed by the rules which apply to the lower blade of the forceps.

A more serious but rarer cause of feverish symptoms preceding delivery is absorption of septic germs from ante-partum hæmorrhage. If a case of hæmorrhage be serious, early delivery will afford the patient the best chance, whether the danger be flooding or risk of fever; but, as soon as the cervix is dilatable, it may still be impossible in certain head-presentations to succeed by the ordinary rules for operative delivery. The condition which creates the difficulty in these cases, is a tendency of the cervix to slip away from the guiding fingers, while the head similarly recedes from the cervix.

I will endeavor to describe to what extent the usual rules for the application of the forceps and for delivery by turning may be safely modified to deal with the difficulty. Having met with three cases of this description, in each instance I tried the forceps first, and in two succeeded in catching and arresting the head, and then lowering it and engaging it in the cervix.

The method of applying the instruments was as follows: The first blade was passed up to the cervix, which slipped away from the fingers as the instrument passed through the os. The progress of the blade was then onward, upward, and forward, till it touched the distant head like a probe touching a bone. The handle was then pushed to the patient's right, while at the same time a movement upward and slightly in front of the axis of the uterus was executed, the blade gliding safely into its position and grasping the occiput. It was now hopelessly high up; but by very steady lateral pressure to the left, while lowering it, I succeeded in retaining the cranium within its grip. Next, by getting the nurse to firmly hold the blade and maintain the lateral pressure, I was enabled to apply the second blade in the usual way, and thus lock the forceps, which speedily effected delivery.

In the case, where the forceps failed, the repeated slipping away of the head before I could get the second blade applied obliged me to abandon the instruments and fall back on turning; but here I was met by an unexpected difficulty. The child, which was very high up, was lying in the usual (*i.e.*, dorso-anterior) position. Every effort to reach the knee or foot by passing my hand between the mother's spine and the child's chest excited such severe reflex contractions that even the placing of the patient under the influence of chloroform failed to overcome them. I therefore explored forward, and beginning by adapting the concavity of my fingers and palm to the convexity of the head, gradually ascended until the occiput was pressing on my arm. Then, moving my hand laterally by the mother's left toward her spine around the left of the child's body, I seized a foot, and instead of attempting to retire by the route I had advanced by (which would have drawn the child into an unfavorable position), completed the lateral movement of my arm round the left of the child's trunk and head. This enabled me to easily bring down the foot, while my hand, which had ascended under the pubes and had made its half-circuit of the child, descended along the spine, sacrum, and coccyx.

The rapidity and comparative ease with which the maneuver was accomplished, and the mother safely delivered of a fine living child, are in marked contrast to the emphasis with which we are taught not to pass our hands forward between the child's back and the mother's abdomen. It was because the proceeding was moderately easy that I persevered with it; if severe reflex contractions had opposed me, I should have felt obliged to abandon the effort and take the risks of further waiting.

When hæmorrhage before delivery has continued for two or three days or longer, and the cervix is resisting and nearly closed, feverish symptoms are apt to appear, and delay becomes increasingly dangerous. In dealing with this difficulty, I have sometimes found it necessary, on account of special complications, to modify the usual rules which exist for our guidance in operative midwifery. The following case possesses specially interesting features. The patient was admitted into the Lying-in Hospital suffering from hæmorrhage which had continued at intervals for three days. The cervix was almost closed, but I managed to introduce my index finger and perceived a hand presentation with the head in front. At the same moment the membranes ruptured, and in spite of all efforts to prevent it the arm descended, wedging the head forward. The cause of the presentation of the hand was doubtless the death of the child (from hæmorrhage). It was necessary to deliver with as little delay as possible, but there was not sufficient mobility to allow the operation of bipolar version to be performed. Turning by the introduction of the hand within the uterus would have been too protracted a proceeding on account of the unavoidable delay during the necessary dilation of the cervix. I therefore decided to endeavor to effect a cephalic version with the help of the long forceps. The lower blade was passed into its position without much trouble, but the cervix contracted pretty tightly around it, making it impossible to introduce the upper blade. In fact the lower blade held the cervix down so firmly to the left that the examining fingers could not expand it sufficiently for the admission and direction of the upper blade. I then perceived that with such a difficulty I would probably have more power—combined with the necessary gentleness of touch—if I were working for the introduction of the second blade with my left hand downward to the left instead of upward to the right of the pelvis. The withdrawal of the lower blade and subsequent application of the forceps by reversing the usual order of introduction enable me to give effect to this idea. Having passed the *upper blade first*, I succeeded, my left hand being now favorably placed for the purpose, in opening the cervix sufficiently for the passage of the lower blade. The forceps did not at once lock, but the necessary manipulation to effect locking was soon accomplished ; in fact, where difficulty in locking the instruments is due not to deformed pelvis but to rigidity, or a faulty position of the head, it should never be necessary to withdraw and reapply the forceps. Studying the position of the head and perseverance in effort will always enable the operator to adjust the position of the blades. It was, however, not easy to keep back the arm and to bring down the head, which was too high up to engage and dilate the still rigid cervix. To facilitate full dilatation I placed in the uterus two pessaries containing 50 per cent. of vaseline, and held them in position while they melted. They were very successful in speedily producing the required lubrication, the os uteri rapidly expanding. This gave me ample room to thoroughly replace the arm with my left hand, while the forceps drew down the head and enabled it to well engage the cervix. Delivery then followed in the usual course, and the patient made a good recovery.

It is, however, less in modes of manipulative procedure than in the conflict arising from the rival claims of the physician's skill and the surgeon's art that differences of opinion most prevail in connection with the preventive and practical treatment of puerperal hyper-pyrexia.

So much stress has been laid on the antiseptic treatment of puerperal fever that the employment of drugs for immediate diminution in the frequency of the pulse and direct reduction of the temperature is insufficiently used as an assistant measure. With those who have still considerable faith in the beneficial effects of drugs, quinine and carbolic acid appear to be the favorites. Both of these do good occasionally in their way, but what may be urged in their favor has been adequately advocated by others, and it is no part of my desire to eulogize them further.

Before passing on to consider the particular drugs to which I wish to call attention, I may say a word as to the empiricism of the treatment. We are now more than ever taught that science should attack the causes which produce and keep up disease, and inferentially that the treatment of puerperal fever should consist, in addition to preventive measures, of general cleanliness and syringing the uterus with antiseptic solutions.

But I think this scientific method of treating the disease has scarcely advanced to such an approach to perfection as to justify our dispensing with the aid of useful assistant treatment, merely because the latter is empirical.

I must not be understood to favor the shirking of the uterine douche. The patient must never be allowed to continue with progressive symptoms for many hours without this operation being performed; but with the quick recognition and prompt treatment of early symptoms it will seldom be required. The pulse is a not less reliable symptom than the temperature, and both should, of course, be closely watched. If the pulse sets in at over 90, 10 minims of tincture of digitalis may be regularly given every three hours till it falls. When the pulse has set in at over 100 I have often given 15 minims every three hours for two or three or more doses. The fall of the pulse is occasionally very rapid, and, if delayed till the action of the drug becomes cumulative, is often accompanied by intermittency.

Should the treatment appear to have been at all overdone, a little wine or small doses of brandy will speedily correct it. If the pulse be about 100, 10 or 12 minims of tincture of digitalis, given every three hours, will often prevent it from rising higher, though the dose is not large enough to produce a sudden or sensational reduction. This perfectly safe and moderate dose, applied particularly to early cases, is the treatment which I specially recommend, though more heroic doses, if given with adequate judgment and care, are valuable aids in more serious cases.

Those whose acquaintance with the subject is limited occasionally speak of washing out the uterus, as if it were a proceeding almost as simple as syringing the vagina, but requiring a longer tube. If the os uteri be easily reached and patulous, it is certainly a very simple affair; and, even if it be not easily reached, provided it be patulous, there is no further difficulty than the necessity of introducing a greater part of the guiding hand within the vagina.

But difficulty may be encountered if the os internum is resisting, and this will, of course, be greatly aggravated if the cervix is also difficult to reach.

The angle in the uterine canal is not alone sufficient to account for the resistance sometimes met with. Nothing but tonic muscular contraction can adequately explain it. Sometimes, as yielding occurs, the well-marked jerk with which the instrument enters is almost as characteristic as the overcoming of a spasmodic stricture of the male urethra, but it as only rarely that such a result as this is perceived. This contracted condition of the os uteri internum is (in the absence of special complications) the only serious danger of what has been termed, and, I think, not inappropriately, autogenetic puerperal fever. Unfortunately tonic contraction of the cervix at the os internum frequently returns after each washing out, as an obstruction to free drainage. To permanently overcome it and to wash out the uterus antiseptically constitute therefore the approved and true surgical treatment of the disease. As soon as undue cervical contraction ceases to return, improvement sets in, but recovery may be delayed, or acute danger even continue, if the action of the absorbed poison is producing a cumulative effect on the system.

The variations in the condition of the cervix when this operation is required, are sometimes a stumbling-block to the practitioner. We are all taught that it may be long or short, rigid or yielding, jagged or smooth, or with one lip long and the other short, but the most dangerous state of the cervix—dangerous because it is a deceptive condition—I have never yet seen any description of, though having not uncommonly met with instances of it. The os externum appears to be normal, and the examining finger discovers no indication of the cervix being unduly elongated. At the isthmus there is a ring of rigidity and resistance, but immediately below it, and as far down as the os externum, the cervix is elastic, soft, and supple. The rigid and firmly closed ring is carried upward by the tube, the practitioner (if he be deceived by the circumstance) believing that the tube has passed through the cervix and entered the cavity of the uterus. The error is not so wholly inexcusable as might at first be thought. Owing to the elasticity of the bulk of the cervix, and the extent to which it is possible to push upward the resisting ring at the isthmus, the tube may be buried for quite three inches within the os uteri externum. The latter is also, in conjunction with the entire uterus, to some extent pushed upward by the operator, thus increasing the length of the inserted portion of the tube, *as measured from the vulva.* This length is now so great that the practitioner does not attach sufficient importance to, or does not thoroughly perceive, the large proportion of it which is below, and the small proportion of it which is above, the os uteri externum, but hopes that he has passed the instrument up to or near the fundus. In some cases the operator is as firmly convinced that he has washed out the uterus as it is actually true that not a drop of the fluid has found its way inside it.

I do not seek to make such a statement in a disparaging spirit of any fellow-practitioners: there is no self-denying work more nobly carried out than the efforts daily made by members of our profession to save women who have been so unfortunate as to develop puerperal fever, these medical duties, which involve serious demands on time, being almost always ungrudgingly performed, though without hope of proportionate fee or indirect reward; but, as has been said in another place, "Nothing should impede our recognition of facts, wherever they are found, and however they may derange our predilections or preconceptions." Therefore I simply record what I have just described as an occasional and unnoticed difficulty in the practitioner's path; and none will deny that there is still room for discussion as to the best means of effecting improvement in the methods of washing out the uterus.

To the forcible plan of seizing the cervix of a feverish patient with a pair of vulsellum forceps, and drawing it down to the vulva, so as to get more command over the uterus, there are obvious objections. The most that can be urged in its favor is that the practitioner may fall back upon it, if other methods prove unsuccessful.

Having tried instruments of various shapes and sizes for washing out the uterus, I give the preference to the long, straight, gum-elastic tube, which will usually fit onto any ordinary syringe. Its end should be slightly bulbous and freely perforated, and its total length not less than 13 inches. The heat of the liquid will warm it sufficiently to produce the necessary flexibility. It must be guided up to the isthmus by the fingers; should spasm now be encountered, steady pressure without force will presently overcome it.

With the view of saving the patient unnecessary distress, I only douche the uterus after operative delivery, when special circumstances require it. In most cases I rely in the first instance, if a slight rise in pulse and temperature should unexpectedly appear, on the treatment, to which in the pages that follow I desire especially to invite attention. Its results may be to some extent judged from the circumstances that since adopting it I have consecutively delivered 75 women by operative midwifery without a maternal death, and, with the exception of three cases hereafter described, without even a serious rise of temperature. These 75 cases were drawn from an actual total of 1,249 labors (hospital and private), but the indicated aggregate was considerably higher from the fact that many of the patients confined in the Lying-in Hospital had been specially sent in by medical men on account of existing or anticipated danger.

The cases about to be described I am dividing into two classes—the first (which for brevity I will call A) including those in which the effect of the drug on the action of the heart was the characteristic intermittency which is known to follow the administration of aconite or digitalis, if given in large enough doses; the second (which I will designate B) consisting of those where the diminution in the frequency of the pulse was not accompanied by intermittency or irregularity.

A 1.—This was the second labor of a patient, who, up to within a short time before her confinement, had resided at St. Helen's. In placing herself under my care she brought a letter from the physician under whose treatment she had been, stating that she had suffered greatly from prolapse of the left ovary and chronic pelvic pain, occasioning severe dysmenorrhœa in the interval between the first and second pregnancy.

He did not seem to have suspected chronic left pyosalpinx, but I ascertained from the patient that up to the commencement of the second pregnancy there had been a free mucopurulent discharge preceding and following each menstrual period.

The labor was protracted, but otherwise healthy, there being no difficulty whatever with the placenta, and everything pointing to a favorable course. For the first three days all went well. On the fourth day after delivery I was prevented from calling till late in the evening, when I found the patient very ill, with a temperature of 104° and a quick bounding pulse of 132, there being distinct tenderness over the left broad ligament. I must here mention a circumstance which undoubtedly had much to do with the acuteness of the development of the fever, viz., a sudden quarrel which occurred between the patient and her mother, who was staying in the house for the purpose of superintending the nursing arrangements. The disturbance was concealed from me at the time, but a fortnight later domestic difficulties broke out again, and in so acute a form that the patient and her husband insisted on her mother leaving the premises.

In this case I did not rely, even in the first instance, on medical treatment and counter-irritation alone, but, having regard to the severity of the case and the probable complication of pyosalpinx, washed out the uterus antiseptically. An 8-oz. mixture, containing 3 fluid drachms of tincture of digitalis, was ordered, 1 oz. to be taken immediately and repeated in three hours' time, followed by one tablespoonful every three hours. Next morning there was an improvement, but in the evening the pulse, which had fallen to 112, again rose to 132. The uterus was therefore again antiseptically douched, and two successive doses of the mixture of digitalis increased to 1 fluid oz. The following day was a further improvement, the morning and evening pulse being 104 and 100 respectively. No further increase in the dose was made, but next morning the pulse, which was so far perfectly regular, had fallen to 52.

The digitalis was therefore stopped, and half a glass of wine ordered every six hours. In the evening the remarkable conflict between the fever and the digitalis was again demonstrated by the rising of the pulse to 110, the drug having been suspended for only twelve hours.

The remedies were therefore reversed, the wine being stopped and the digitalis mixture, in doses of one tablespoonful every three hours, resumed. The following morning the pulse was 60, and beginning to intermit, the fever also finally abating. The drugs were therefore again reversed, the digitalis being stopped and the wine resumed. The pyrexia entirely subsiding now gave full play to the digitalis in the system, whose effect on the pulse was intensified, the intermittency being well marked for two or three days. The patient made an excellent recovery.

A 2.—This was a severe primiparous labor, delivery being effected with the long forceps. The patient was somewhat exhausted, but I did not anticipate any unfavorable change. Next day, however, there were symptoms of acute fever, though the pulse was only 112. An 8-oz. mixture containing 3 fluid drachms of tincture of digitalis was ordered, 1 oz. to be taken every three hours. In less than twenty-four hours the pulse was under 80, and intermittent; the fever was checked, but not killed, the temperature being still two degrees above normal. The digitalis, having temporarily reduced the frequency of the heart's action, was for the time discontinued, as it always should be when intermittency appears or its administration has occasioned a marked drop in the pulse. Its withdrawal was followed by a return of the quick pulse, as soon as the effect of the drug on the heart's action had subsided. It was therefore resumed, 1 fluid oz. of the mixture being given twenty-fours after it had been stopped, the pulse at the time being 116 and full. Two more doses of 1 fluid oz. at intervals of three hours produced the desired effect, the pulse being reduced to 76, and again becoming intermittent, the other symptoms of fever at the same time abating.

A 3.—This was an out-patient of the Ladies' Charity. The residence was an abode of misery and squalor. The bed, if such it could be called, was on the floor, there being no pretense of a bedstead. The case was one of puerperal peritonitis with a pulse of 135. Turpentine was applied to the abdomen, and 20 minims of tincture of digitalis ordered every six hours. The pulse, after remaining full and ranging from 120 to 135 for three days, suddenly dropped to subnormal, and became intermittent. On the fall of the pulse immediate recovery supervened.

The reason why the uterus was not at once washed out in this case was, lest the awkward position of the patient, if difficulty had been encountered, might have added to the not inconsiderable risk of increasing the inflammation. If worse symptoms had developed, it would have been necessary to have taken this risk, a procedure happily obviated by the effect of the counter-irritation, and inhibitory influence of the digitalis.

A 4.—This was a case of puerperal peritonitis occurring on the fourth day after delivery. The confinement had been healthy. I attribute the attack to what is, I believe, an occasional cause of fever and sometimes, as in this case, of inflammation up to the fifth or sixth day viz., *cold*. Nurses in their anxiety to secure disinfection and cleanliness often fail to attach sufficient importance to the necessity of scrupulously guarding the patient from the danger of a chill. I believe a chill caught in this way would only be likely to occasion localization of symptoms by evident inflammation, when there had pre-existed abdominal or pelvic tenderness. In this patient the former condition had been present, and to this fact I attribute the circumstance that the cold first attacked the peritoneum. This explanation of the origin of the attack is also strengthened by the fact that the patient was extremely thin, the peritoneum and abdominal organs thus lacking to a great extent their natural protection from exposure.

The temperature was only 100°, but the pulse was 120. Turpentine was applied to the abdomen, and 3 fluid drachms of tincture of digitalis were ordered in an 8-oz. mixture, 1 fluid oz. to be taken at once, and repeated in three hours' time, followed by half an ounce every three hours. Eighteen hours afterward the temperature was normal, and the pulse under 70 and beginning to intermit, the abdominal symptoms having also subsided.

A 5.—This was a severe case, though the symptoms developed late. Digitalis failed to influence the pulse, which remained at 150 for three days. The cervix obstinately resisted the entrance of the uterine syringe, though an effort under chloroform might have been successful, but one hesitates to place under the influence of an anæsthetic a patient exhibiting such acute symptoms.

I therefore decided to try aconite, and ordered 5 minims of the tincture to be taken half-hourly till the pulse became less frequent. After five doses had been given, and in less than three hours from the substitution of aconite for digitalis, the disease had been cut short and the patient cured, all symptoms of fever entirely and promptly abating. The pulse had fallen to less than 90, and was intermittent.

This case is one of the most striking out of many in which I have succeeded in rapidly arresting severe symptoms by aconite or digitalis. The failure of the latter drug in this particular case was due, I believe, to its not having been obtained from a reliable source, but at that time I had not sufficiently recognized the necessity of using tincture of digitalis only when it has been very freshly prepared. It is essential that only fresh preparations of this drug should be used, the great majority of chemists keeping the tincture until it is almost inert or its strength greatly diminished. I never trust to the patients' chemists, but insist on the drug being obtained from one of the leading firms.

B 6.—This was a severe primiparous labor. The patient was exhausted, and, as hæmorrhage followed, the uterus was washed out with hot water. More blood was nevertheless effused, and to a certain extent retained, but on account of excessive tenderness, chiefly of the external genital organs, no further attempt was made to syringe the uterus. Symptoms of fever supervened. The patient was at once put on treatment by aconite, 5 minims of the tincture being given every six hours. The object was not to immediately force down the pulse (as in the last case) by powerful doses, but merely to check any further rise which might otherwise have been produced by the fever. The pulse was 104 and remained the same for four days, when, the fever abating, the cumulative effect of the aconite came into play, and the pulse dropped to less than 60. In this case the treatment saved the patient the repetition of the operation of douching the uterus—a proceeding which was not likely to be accomplished with less difficulty and pain than were experienced when it was done just after the completion of labor.

B 7.—This was a case of puerperal fever with peritonitis, to which I was called by the attendant midwife. The temperature was 104°, pulse 135, and all the symptoms serious. The uterus was washed out antiseptically, and 20 minims of tincture of digitalis given, followed by 20 in three hours' time, and 10 every three hours. After thirty-six hours there was only a slight improvement. The uterus was therefore again douched and two successive doses of the digitalis increased to 20 minims. The pulse came down with a sudden fall, immediate abatement of the fever and peritonitis supervening.

B 8.—I was called to see a patient suffering from feverish symptoms which had developed rapidly. It was the sixth day after delivery. The pulse was 104 and the temperature 103°. Except slight tenderness of one breast there was nothing seriously wrong with the milk, which was plentiful and free. An 8-oz. mixture was ordered, containing 3 fluid drachms of tincture of digitalis. Two tablespoonfuls were ordered to be taken at once, and in one hour's time, to be followed by one every three hours; but by a mistake of the nurse 2 fluid oz. were given at once followed by two tablespoonfuls in an hour's time, and one every three hours. When I visited the patient again, just eleven hours after the treatment had been commenced, the pulse was under 80 and the temperature 101.5°, the greater rapidity in the fall of the pulse than in the decrease of the temperature being in this case specially noticeable on account of the overdose accidentally taken. The pulse remained normal, but it was not till after the expiration of thirty-six hours from the commencement of the treatment that a temperature of 98.4 was registered.

This case is an illustration of cutting short a feverish attack through the inhibitory influence of digitalis on the heart's action.

B 9.—The patient was a primipara, and had a severe labor, requiring the forceps, but the child's head being large, and the perineum tense, I removed the blades before the head engaged the vulva. The child, which was a male of exceptional size, slightly tore the perineum and caused general severe bruising of the labia. If the perineum had not been abundantly lubricated and carefully supported, the laceration would have been more serious, but one stitch was all that was required to secure the necessary firm union of the parts, carbolized catgut being used.

For some hours subsequently the patient suffered from great exhaustion, giving rise to uterine relaxation with slight hæmorrhage, which was controlled by ergot and pressure on the fundus.

In the evening, about twelve hours after delivery, acute fever had commenced, the temperature being 103.5° and the pulse 132. On account of the inflamed state of the vulva, and the injury to the perineum, it was desirable, if possible, to save this patient without having recourse to syringing the uterus, but I doubt if this could have been accomplished otherwise than by prompt treatment with drugs having inhibitory influence over the action of the heart.

I ordered an 8-oz. mixture, containing 3 fluid drachms of tincture of digitalis, 1 fluid oz. to be taken at once, and repeated in three hours' time, followed by one tablespoonful every three hours. Next day there was a slight, but only a slight, improvement. Two successive doses were therefore increased to 1 fluid oz., and a little nepenthe given to procure sleep. The following day the improvement was considerable there being no occasion to again increase the dose, but the mixture was ordered to be repeated.

The fever, however, completely abated before the fifth dose of the second bottle had been taken, but it had been sufficiently severe to totally and permanently suppress the milk.

B 10.—This patient was a primipara, admitted into the Lying-in Hospital, suffering from nephritis and general dropsy; the labia and legs were extremely œdematous, and the urine loaded with albumen, but with a specific gravity of 1.020.

The discomfiture caused by the pain and swelling of the vulva was great, although the labia had been freely punctured by a medical man prior to her admission. Her pulse was 120 and temperature 101.5°. Light diet, rest, and care, with counter-irritation over the loins, brought about an improvement, the dropsy almost disappearing, and the temperature and pulse becoming normal, with, however, the amount of albumen being only slightly diminished. Eleven days after her admission labor set in, and was rapid for a first case. She had a painful but otherwise healthy accouchement, and was delivered of exceptionally fine twins, of which one was stillborn, on the morning of 25th February, 1891.

Next day, the temperature being 100° and the pulse 100, the patient was ordered 10 minims of tincture of digitalis to be taken every three hours. In the evening she became worse, but the following morning the pulse had fallen to 94 and the temperature to 98.6°, everything pointing to favorable progress. Nevertheless, on the morning of the following day, she was seized with a severe rigor, the pulse rising to 140 and the temperature to 105°. Delirium ensued, and acute bronchitis further complicated the symptoms. Ice was applied to the head, and turpentine freely to the chest, and the mustard over the loins repeated. I did not syringe the uterus, as the shock to a patient in such a condition could hardly have escaped proving fatal. Two successive doses of the tincture of digitalis were increased to 20 minims, and were followed by improvement, the delirium abating. At night 15 grains of chloral were given, and she obtained four hours' sleep.

On the fourth day after delivery and subsequently, as shown by the accompanying chart, she made good progress. The tincture of digitalis was continued until the eleventh day, a double dose (*i.e.*, 20 minims instead of 10 minims) having again been required on only one occasion, viz., on the morning of the fifth day, the temperature at the time being 101.8° and the pulse 114. At the end of a month the albumen had almost disappeared from the urine, and she left the hospital in all other respects quite well.

With regard to the first class of cases (A), even those of my critics, who are the most skeptical as regards their general faith in drugs, freely admit that the treatment arrested the fever; but they assailed me on the ground that my system of prescribing is dangerous. This criticism, I believe, I shall have no difficulty in proving to be unfounded.

With regard to the second class (B), many refuse to believe that the drugs materially assisted in reducing the frequency of the heart's action, and thus helped to arrest the fever. Now, if I presented Class B series of cases alone, I would fully recognize the inadequacy of the *post hoc ergo propter hoc* argument, but I submit that the results claimed for the drugs in Class B series must be considered conjointly with the results undoubtedly obtained in Class A.

It is not only a fair inference, but in my judgment the only one which can be drawn, and a conclusion that appears irresistible, having regard to what actually happened in the cases of Class A and Class B respectively, that in the latter series the quantity of the drugs given was not quite sufficient, though verging on the amount required, to produce intermittency; while the fall in the pulse, followed by the abatement in the fever, was chiefly the direct result of the aconite or digitalis. It is well known that diminution in the frequency of the pulse generally precedes intermittency after the free administration of drugs which possess inhibitory influence on the heart's action.

The series recorded show that the treatment has succeeded even in in cases of exceptional severity; but, when a cause is so advanced that delirium has become confirmed, little can be hoped for from drugs, which chiefly influence the heart.

I believe that feverish patients can almost always be prevented from drifting into so hopeless a condition by the early adoption of the treatment which it is the chief object of this paper to advocate. Not only have I never known this early treatment to fail, but I have always known the same system succeed, however late it has been applied, provided that delirium had not become established. The cases where failure has occurred have only been in two in number, both being patients whose labors I did not conduct, and to whom I was only called when the fevers had assumed a desperate and delirious character.

There will be no risk of dangerous prescribing if the following conditions are observed:

I. The patient must be free from heart disease.

II. The pulse and temperature must be taken by a competent nurse each time a dose is given, if the following quantities are exceeded or continued for more than twenty-four hours, viz., 12 minims of tincture of digitalis, or 2 minims of tincture of aconite every three hours.

III. She must be instructed to stop the medicine—

(1) If the pulse, having been high, say over 120, begins to fall rapidly.

(2) If the pulse, not having been high, say about 100, falls to less than 90.

(3) If the pulse becomes intermittent or irregular.

(4) If the temperature falls to subnormal.

IV. If the physician has exceeded the above-mentioned doses to deal with a pulse, say of 120, he should be careful, when the pulse begins to improve, to promptly reduce the medicine within the limits stated, or suspend it altogether for a sufficient number of hours to enable him to judge whether its resumption will be required.

Having alluded to confirmed delirium as an indication of great danger, I desire to condemn the free prescribing of wine or brandy in such cases. Alcohol is apt to increase the blood-poisoning of the brain; if stimulants are indicated, ammonia and ether are preferable drugs. The points of greatest importance for this class of cases are (1) the avoidance of shock and chill whenever the uterus is douched; (2) removal of the hair with occasional and cautious application of ice to the head; (3) free support of the patient's strength with nutritious liquid food; (4) rubefacient counter-irritation applied successively to different parts, such as the neck, back, chest, abdomen, or even the calves of the legs.

Finally, my conclusions as to the benefits of digitalis or aconite may be thus summed up:

I. The tinctures, if freshly prepared, are of great value in promoting the arrest of puerperal fever.
II. They must be prescribed, and, if necessary, pushed in sufficient doses with courage, judgment and care.
III. They are intended in any serious case to assist, and not to supersede, treatment by the uterine douche.
IV. The line of successful prescribing can be safely reached by a judicious practitioner *without crossing the line of danger.*

A STUDY OF ATROPHY.[1]

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I wish to invite your attention to an historical review of certain characteristics presented by that diminution of volume or mass of an organ or part that is described in one word, *atrophy*, and perhaps less to its pathological than to its clinical side. Strictly speaking there is a great difference between arrest of growth and atrophy in the true pathological sense of the word, and yet, as surgeons see these cases, there is at times so little apparent difference between the respective results of the two processes that we make very little clinical distinction between them. At all events, without dealing just now with minute differences, let us see what of interest a discussion of coarser features may bring out. I wish here to acknowledge no small indebtedness in this connection to a work published in 1882 by Mondan, entitled *Recherches Expérimentales et Cliniques sur les Atrophies des Membres*, which emanated from the Lyons school, and which is based largely on observations made in the clinic of Ollier, than whom no more accurate observer of such matters is known. It is a brochure little known or read, at least in this country, but it will amply repay perusal.

In Petit's *Traité des Maladies des Os*, ii. 23, we find some interesting notions concerning muscular atrophy after fractures, expressed thus: "Atrophy or diminution is an accident which supervenes, not at the beginning, but later, by enfeeblement of nerves and arteries which continue to be compressed, either by exuberant, callous or too tight bandaging. These obstacles to free circulation may cause lack of nutrition or atrophy." In 1776 John Hunter put forth his theory, according to which sympathy figured largely in the process, and in which may be found the germ of the idea of atrophy by reflex action. In 1835 Nélaton insisted upon the importance of atrophy of the thigh among the signs of hip-joint disease. He stated that the arrest of development of osseous tissue was proportional to atrophy of soft parts, and that this was a rule to which there were very few exceptions. It is also observed, he stated, not only in spontaneous luxations, but in all those diseases that condemn a limb to prolonged rest. Thus he cited atrophy of the femur in the case of a necrosis of the pelvis. These ideas are elaborated in his great work (*Path. Chir.*, 1847, ii. 264).

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[1] Read before the American Orthopedic Association, at Washington, D. C., September 23, 1891.

In 1837 Curling published his "Remarks on Certain Forms of Atrophy of Bone," (*Med.-Chir. Trans.*, 1837, p. 336), in which he described a *concentric* and an *eccentric* atrophy of bone. The former depends mainly on local causes, such as consecutive dislocations, caries, inflammations resulting from gunshot fractures, etc. He included here the bone in an amputation-stump, as well as the atrophy of ankylosed limbs. He speaks of *functional inertia*, and the influence of the central nervous system by which, in paralytics, healing of fractures is delayed. He shows how compression of the main artery supplying such organs as the liver, spleen, or kidneys, will lead to their diminution, and he considers at some length the atrophy of a bone-fragment broken from a main portion which contains the principal nutrient artery. The nutritive supply in such cases cannot be maintained, owing to the inextensibility of the Haversian canals; consequently the fragment slowly disappears. Under the head of eccentric atrophy he deals mainly with osteo-malacia, which is a generalized process depending upon a constitutional condition.

Bonnet was alive to the importance of atrophic processes, and in *Traité des Mal. des Articulations*, 1845, i. 217, he wrote: "Whatever the varieties which they present, according to anatomical conditions, chronic inflammations of the synovialis consecutive to mechanical injury engender always an atrophy, more or less marked, of the surrounding parts." In general this will be noted about the injured joint, but sometimes it extends further, and may effect an entire limb. But Bonnet was, perhaps, not the first, certainly not the only one of his day, to allude to atrophy as a significant accompaniment of chronic joint-disease. Malgaigne (*Anatomie Chirurgicale*, i. 166) directed attention to disappearance of the alveolar process when deprived of its teeth, to thinning of the cranial bones after trephining, and to atrophy of the ilium and femur after old and unreduced dislocations of the hip. Even for Malgaigne functional inactivity was the cause of diminished nutrition.

In 1845 Roux put forth certain noteworthy views (*Annales de la Chirurgie*, xv.), especially with reference to atrophy of the deltoid in arthritis of the shoulder. For him the stretching of the muscle over a capsule distended with fluid was the sole and sufficient cause; an analogous condition occurring also at the knee.

Denonvilliers in 1853 presented to the Société de Chirurgie a boy of seventeen, whose right arm had been amputated ten years previously. At the same when he was exhibited there was a protruding necrotic stump, three centimeters in length. At the same meeting Guersant reported a similar case. He asked whether this was not due to a physiological elongation of the bone rather than to any fault in the operative technique (*Bull. de la Soc. de la Chir.*, iii. 430.)

In 1858 took place another interesting discussion in the same society concerning this growth of amputation-stumps. (*Bull. de la Soc. de la Chir.*, ix. 450.)

Seeking a cause for the fact that in young subjects the bone frequently grows through the soft parts of the stump so as to perforate them, Marjolan attributed the longitudinal growth of the bone to " a certain degree of ostitis propagated from the upper epiphysis." This explanation, accepted by Broca, was denied by Chassaignac and Richet, who explained the relatively greater growth of the fibula in leg stumps to osteophytes developed at its extremity along with necrosis of the tibial end.

Humphry (*Treatise on the Skeleton*, p. 70) in 1858 called attention to the results of disease of bone. " If a limb be not used, the bones usually waste. . . . These points are well illustrated by the conditions which the bones of stumps present when the limbs have long been amputated. In some the bones are cleared of their cancelli and reduced to a mere porous shell, the size remaining unaltered. In others they become much reduced in circumference, their walls retaining their proper density. In a third class the bones are small, and are also light and porous. In a case recorded by Larrey, of a man who died forty-one years after amputation of the arm near the shoulder, the scapula was as thin as paper, and the clavicle no thicker than that of an infant. I am *not aware* that a bone is *ever reduced* in length as a consequence of atrophy. If a part be disused by reason of paralysis or other cause, the bones may fail to attain their proper length; but, having attained it, I do not know that they ever lose it."

In 1859 Gosselin and Lejeune published important articles concerning muscular atrophy consequent upon fractures. They claimed that it always occurs in adults, the former reporting a case in which it existed ten years after the fracture. In children it is very much less common. Gosselin ascribed a more important part in producing atrophy under these circumstances to immobilization than to compression by bandage, and says: "The condition cannot be attributed to the surgical apparatus, but depends entirely on the primary affection" (*Gazette Hebdomaire*, 1859, 130–164.

Coulon, in 1861 (*Traité des Fractures chez les Enfants*), speaking of fractures in children, says that perhaps "scrofula"—that is, "scrofula of bone"—may, without producing caries, so weaken the osseous tissue by rarefaction as to predispose it to fracture. He says that he had never noticed muscular atrophy in children perhaps because of the comparatively brief time in which their bones heal; but he fails to recognize that such periods of time are only relative. Referring to experiments made by Baizeau and Herpin concerning elongation of fractured bones, he says that he has not seen sufficient clinical proofs to permit him to acknowledge such a growth. The old subject once more came up before the Société de Chirurgie in 1884 (*Bull. et Mém.*, x. 521), when Kirmisson showed an amputation-stump in a lad of twenty, whose leg had been amputated when he was four years old. At the center of the stump was a bony projection, divided into two tuberosities by a transverse fissure. One of these belonged to the tibia, the other to the fibula, both having been fused together. Faraboeuf, while not rejecting Verneuil's views, suggested that such cases might be explained by a too rapid primary union with insufficient solidity of muscle and soft tissue, and that the condition might be prevented by causing the stump to heal by granulation. All agreed that in children amputation-flaps should be made exceptionally long.

To this particular atrophy affecting stumps Verneuil has given the name *physiological conicity*. He describes it (*Mémoires*, ii. 830) as occurring especially in arm and leg stumps; less often in thigh and forearm, because of lesser activity of the cartilages of the upper ends of the femur, radius and ulna. He saw a large number of examples while distributing prosthetic apparatus at the Central Bureau of the Parisian hospitals.

These statements of Verneuil's, if not founded upon the more elaborate explanations of Humphry, at all events corroborate them. It has been shown by Humphry (*Med.-Chir. Trans.*, xliv. 118) that the extension of the shaft takes place most quickly, and is most prolonged at the end where the bone can best bear the weakening consequent on the more rapid changes in the growing matrix; and that is usually the larger end. For instance, the lower end of the femur is usually the larger and is more favorably circumstanced for bearing weight and resisting muscular force than the upper end; and the ossifying processes are much more active, and are longer continued at the lower end than at the upper. In the tibia the lower end is at a disadvantage in comparison with the upper, in consequence of its smaller size, the greater weight borne by it, and the violent shocks to which it is exposed from its close proximity to the ground, and there is less growth here than at the upper end. In the upper limb the conditions are in many respects reversed, and growth is, consequently, more active at the upper part of the arm and at the lower part of the forearm.

Numerous other writers have alluded to the same condition. In one of Liston's cases the humerus projected in an extreme degree, and terminated in a hook-like process or exostosis. The latest contribution to the subject is by C. A. Powers (*Med. Record*, June 7, 1890, p. 641), who reports several instances.

But it is to the *Traité de la Régénération des Os* of Prof. Ollier that one turns with the greatest satisfaction for the experimental elucidation of this subject. Thus we find (i. 377) a long chapter upon the influence of irritation or of removal of various parts of bones upon their growth. After having established that the most common cause of hypertrophy of bones is irritation, he studies the causes of arrest of their development and their atrophy. Two factors come into play here: the destruction of tissue which may concern and favor their growth, and gradual failure in the evolution of such tissues. They necessitate a careful study of epiphysis, diaphysis, and conjugal cartilage, which Ollier has carefully carried out experimentally, and has shown that it is not by a precocious union of epiphyses to shaft that lesions of epiphyseal cartilage produce arrest of growth, but that the initial factor is arrest of proliferation of cartilage cells. He has, furthermore, fully described the effect of fractures, of epiphyseal separations, of arthritis, and ankylosis in producing retractive tissue changes. Mutilations of bone almost always produce arrest of development, which yet varies much according to whether the *arthrodial* or conjugal cartilages, the epiphysis, or the shaft has been most interfered with. Not only in the bone operated on do tissue changes occur. In the case of the forearm and the leg the parallel bone frequently undergoes alterations; sometimes this is in the direction of increase of thickness; that is, a compensatory hypertrophy, or, when one is pretty firmly fixed to the other, the more rapid growth of one forces it to assume a curve or some change of shape.

I have recently seen such alteration in the lower end of the fibula, apparently produced in the first place by a club-foot, upon the outer side of which the patient (a girl of sixteen) walked, pressure upon the fibula being thereby removed and a certain tension produced by pull upon the external lateral ligament, while the whole weight was borne by the tibia. The result was that the lower three inches of the fibula assumed the exact shape of the arc of a circle of some ninety degrees.

So, for instance, after resection of the radius and ulna, the humerus though not operated upon at all, ceases to grow with the same rapidity as does that of the opposite side ; and if the humerus alone has been attacked, the scapula on one side and the radius and ulna on the other are indirectly affected. These alterations are of a peculiar nature and do not occur immediately; they take place by a gradual transition-state, during which they diminish in volume but increase in length. To this phenomenon, which he has most carefully studied, Ollier has gived the distinctive name of *atrophic elongation*.

To the atrophic changes occurring in stumps, also, Ollier has paid great attention. But little has been said or written in this regard. Since the discussion on the Société de Chirurgie in 1858, alluded to, Humphry published two memoirs and the more recent researches of Güterbock include nearly all the literature of the subject. Nearly every one who has dealt with the subject has alluded to the atrophy which is most marked in connection with stumps that are nearly immobile ; while the clinical fact was generally recognized, the interpretation remained for Ollier to enunciate. He lays great stress on the effect of *functional inertia* and has sought to assign its correct position among factors. By observation and by experiment he came to the conclusion that function of a limb was a necessary stimulus to the growth of its skeleton. Suppression of this stimulus leads inevitably to atrophy of the part. This was but a systematic and comprehensive statement of generally recognized facts.

In 1870 Boeckel published an interesting memoir concerning the effects of hip joint disease in causing atrophy of the lower limb. He formulated these conclusions :

1. That arrest of growth is proportional to functional inactivity and atrophy of muscles.

2. That the bones are rarefied and that active treatment, while shortening the course of the disease, acts also to lessen the extent of the atrophy.

3. That pelvic distortion (posture-deformities) tends to produce arrest of growth, exaggeration of the pressure transmitted through the femur and atrophy of the muscles of the buttock.

4. That shortening affects the superior pelvic strait, but not enough to cause a serious obstacle to parturition (*Archives de Physiologie*, 1070–71, p. 435.)

A thesis by Collettee, in 1872 (*Thése de Paris*, No. 182), marked an advance, since not only did he discuss the atrophy which accompanies certain forms of joint disease, but he calls attention to the increase of fatty tissue which often accompanies wasting of other soft parts. More than this, he showed that curious atrophic freaks occur. Thus he cites a case of gonitis with wasting of both upper and lower limbs on that side with great increase of fatty tissue, a notable enlargement of the breast, and a marked atrophy of the testicle on that side.

In quoting this case I am reminded of a case of my own, an amputation-stump in a young woman whose thigh I amputated seven years ago when she was sixteen years old. The stump is now not conical, though it would be were it not that an overgrowth of adipose tissue makes it measure more in circumference than does the opposite thigh at the same height.

It was in 1873 that Reyher's careful study upon the influence of prolonged immobilization upon the joints appeared (*Deutche Zeitschrift Chir.*, iii. 189). His microscopical studies of the various tissues implicated gave a peculiar value to his work. He never found any inflammatory phenomena, either hyperemia or tumefaction. Consequently, the atrophic changes of the adult or aged are merely a degeneration not caused by inflammation.

Sabourin, during the same year (*Thése de Paris*, 1873), introduced a novel theory to account for the atrophies which accompany articular rheumatism, particularly those which one encounters about the shoulder in the deltoid, according to which it was due to irritation of the peri-articular fibrous tissue. To confirm this view, he pointed to the extreme soreness in muscular origins and insertions; in other words, to the extreme tenderness of masses of fibrous tissue in the neighborhood of any rheumatic lesion. Duchenne, in particular, has described an atrophic form of deltoid rheumatism to which Sabourin quite eagerly applies his explanation.

It was not long before confirmations of Ollier's studies begun to appear. Haab in 1875 published a brochure, in which he corroborated Ollier's views concerning the normal growth of bone, and then he mentions pathological elongation after fractures, ostitis, and arthritis, and gives some of the cases reported by German surgeons. Assigning a secondary rôle to inertia and immobilization, he lays the principal blame upon the epiphyseal cartilage. For sympathetic elongation of the femur it is enough to have an irritation of the tibia sufficiently active and lasting. Failure of pressure upon the joint is a sufficient reason in his estimation, and he proposes to substitute the expression *elongation from lack of pressure* for Ollier's term, atrophic elongation. Haab fails to apprehend how atrophy can produce elongation. He would account for many of these bone-changes by sympathy between femur and tibia, for instance, so that one is lengthened or shortened when the other is pathologically elongated, all of which, says Mondan, while criticising these expressions, is rather incomprehensive.

During the same year appeared the essay of Gütierbock (*Arch. für klin. Chir.*, xvii. 584), in which he attributed the bone atrophy of an amputation-stump to an irritative action, the evidence of which he found in the occasional presence of osteophytes, and of other tissue alterations, such as the subperiosteal development of giant-cells, as described by Rusticzky. He considers these to be the results of functional inactivity in subjects of various ages and conditions. The experiments of Milne-Edwards, published fourteen years previously (*Annal. des Sciences Natùrelles*, 1861), may have some bearing in this connection, as they appear to have in the thesis of Teissier (Paris, 1875). If we deprive animals (birds) of food containing calcareous elements, the volume of their bones diminishes, but their composition does not vary. At the end of three months the bones of such animals will weigh a third less than those of one normally nourished, but analysis would show no change.

Fifteen years ago Sir James Paget made these remarks in one of his published clinical lectures (*Lect. IV.*, p. 208), speaking of wastings of limbs near affected joints: "This wasting occurs quickly in nearly all acute inflammations of joints; more slowly in the chronic inflammations. In the chronic it may be from disuse alone; in the acute it is not so, for it is much more rapid and extensive than in any cases of mere disuse. Compare, for instance, cases of fracture of the thigh with those of acute disease of the hip, and you will see how much greater is the wasting with acute disease than with disuse alone. Rapid wasting may be seen in the whole lower limb, especially in the thigh and the nates, in all acute hip-joint diseases; more slow wasting in the painless scrofulous diseases; less still in the chronic rheumatic. Wasting in the lower part of the anterior and lateral muscles of the thigh is quickly apparent in acute knee-joint disease; only less quickly in the chronic. . . . It is, I repeat, not a mere wasting from disuse; it is far more rapid than that; more like what has been called acute atrophy of muscles, such as may often be seen in the swiftest cases of infantile paralysis. . . . It seems dependent on disordered nervous influence, and often appears proportionate to the coincident pain, as if it were due to the disturbance of some nutritive nervous center, irritated by the painful state of sensitive nerve fibers."

Two years latter appeared Valtat's excellent thesis (*De l'Atrophie musculaire consécutive aux Maladies des Articulations*), which contained the following conclusions:

1. Most joint-diseases react energetically upon the nutrition of the muscular system.

2. Very early in such one sees a notable atrophy with paresis, more or less accentuated, of certain muscles, particularly those pertaining to the affected joint.

3. This atrophy is not the result of functional inertia, or of inflammation of muscles, nerves, or cord; in all probability it is produced by the same mechanism as the other reflex phenomena.

4. It is a matter of no small importanec; it increases usually *pari passu* with one joint-lesion, and remains, in the vast majority of cases, after this has been recovered.

5. Its duration is commonly long, and it shows no tendency to spontaneous disappearance. Sometimes the muscles recover themselves by exercise, but by no means always.

6. They improve much more rapidly under the use of the continued current, or, better still, under the combined usage of both currents.

The clinical phases of the subject were excellently presented by Berguien (*Thèse de Paris*, in 1877) the same year. His was the first work in which the relations between the development of the bones along with their superimposed muscle were clinically discussed. Studying fifty-nine cases of hip-disease, he demonstrated that there is always atrophy of the limb in these cases, and that it pertains to the bone as well as to the muscles, especially in very young patients; that the bone-atrophy is most marked about the joint where the effects of pressure would naturally be greatest, and that it is itself due to atrophy of blood-vessels; that deficiency of nutrition can be demonstrated by the thermometer; and that in those rare cases in which atrophy does not appear any one may impute the fact to a coxalgia, coming on after the eighth year, when the subjects are very courageous and seek to keep the limb in active service.

In 1877 and 1878 Helferich published memoirs of considerable importance (*Archiv. d. Phys. und d. Anat.*, Mai, 1877, and *Deutsche Zeit. f. Chir.*, 1878, x. 324). He had demonstrated by numerous experiments, and as opposed to the views of Wolff, the exclusive rôle played by the conjugal or epiphyseal cartilages in longitudinal growth of long bones. This he did by excising them from growing young animals, and noting the failure to grow. In his second paper he studied the disordered relations that exist between necrosis and the coefficient of growth of various bones; he takes up the question of the frequency of inflammation in the different parts of the same bone, and after showing that it is in the vicinity of the cartilages that it occurs most commonly, he finds here the verification of his experimental work.

Passing by a number of brochures in which appeared nothing of great importance, De Clerville republished in 1880 (*Thèse de Paris*) a remarkable case of nearly total disappearance of the humerus, first broken at the age of eighteen, and twice after that. Only the superior and inferior epiphyses were left, and these were represented by small pieces. The patient died at the age of fifty-two, and the muscles of the arm presented a remarkable atrophy and fatty degeneration. Similar cases are of course reported in the work of Béranger-Feraud, but a case of this completeness or intensity is perhaps unique. It must be attributed largely to the influence of repeated irritations upon the vitality of the callus.

Lataste (*Thèse de Paris*, 1881) propounded in 1881 a novel explanation of the muscular atrophy following fractures. For him it depended not on immobilization, or compression, or lesion of nerve-fibres, but upon a certain degree of myositis, which was evidenced by local elevation of temperature.

In 1882 Segond (*Rev. de Chir.*, Août et Sept.) described a diminution in the caliber of the vessels in amputation-stumps or curtailed limbs. This is never consecutive to muscular atrophy, but sometimes precedes, sometimes accompanies it; and is, according to Segond, a very important contributing factor.

The causes, then, so far as generally ascribed, which lead to atrophy of parts, may be thus rehearsed:

a. Functional inertia.
b. Inequality or defect of nutritive supply.
c. Inflammation.
d. Something in the general condition.
e. Trophic-nerve disturbance.

These have been thus arranged by Mondan.

Within the present year Duplay and Cazin have published (*Archives Générales de Médecine*, Jan., 1891) the results of certain experimental researches into the nature and origin of muscular atrophies following diseases of joints, stating that of all the various theories advanced to explain atrophy of muscle following joint-lesions the "reflex" theory of Vulpian has found the most general acceptance, *i.e.*, changes originating in the irritated terminations of the articular filaments. This theory explains the rapidity of onset and the absence of the reaction of degeneration, either in the cord or in the large nerves. In their researches acute arthritis of the knee was produced by the injection of tincture of iodine or nitrate of silver, or by the actual cautery. In four or five days an appreciable diminution in size of muscles was invariably noticed ; in eight or ten days they had become soft, and the atrophy steadily progressed until about the fifteenth day, when it either ceased or progressed much more slowly. The animals were killed at intervals up to the thirtieth day, when the various muscles of the healthy and affected limbs were carefully weighed. The loss of weight amounted in some cases to 50 per cent. Microscopic examination of the nerves of these limbs shows that no lesion is usually present in the large trunks or in the motor filaments, but in articular nerves characteristic changes were constantly present. These changes are partly degenerative and partly inflammatory; they never show signs of spreading upward along the nerve-trunk, and no ascending lesion such as has been described after amputation, could in any case be discovered, nor were there any alterations in the spinal cord, or nerve-roots or ganglia.

The authors consequently deduce the following two conclusions: 1. That the muscular wastings following muscular lesions tells of a simple atrophy. 2. That this atrophy can be explained only by reflex action through the spinal cord, produced by the irritation of the terminal filaments of the articular nerve.

This appears to summarize fairly well the valuable literature of the century concerning an important topic. Such special attention as the writer had intended to devote to a further elucidation of Ollier's views on *atrophic elongation*, and a summary of his experimental work, will have to be postponed to another occasion, and made the topic for another communication.

RESECTION OF THE OPTIC-CILIARY NERVES.

By Julian J. Chisolm, M.D., of Baltimore, Md., Professor of Eye and Ear Diseases in University of Maryland; Surgeon-in-Chief of the Presbyterian Eye, Ear and Throat Charity Hospital, of Baltimore City, etc.

This operation, which is so valuable in many cases, seems to have been abandoned by some ophthalmic surgeons without sufficient cause. That accidents follow any operation, even the most simple, is an every day occurrence; and, in the nature of things, must be occasionally looked for. Under careful manipulation, which every surgeon is expected to exercise, failures should become more rare, and therefore should be very seldom met with.

Simple nerve-section, as a surgical procedure, is not always a radical method of relieving pain. Even when a considerable portion of a nerve has been excised, sensation has been in time regained, with a return of the suffering for which the operation had been undertaken.

To this experience the ciliary nerves are not exempt, and yet they possess many peculiar advantages for a successful section. Their location, so easy of access; their isolated surroundings; the small extent of incision required; the small amount of blood lost; the loose connective tissue in which the nerves are imbedded, permitting a considerable separation of the divided nerve-ends by the accumulating blood pushing forward the eye-ball and forcing backward the socket tissues; then the displacing of the delicate ciliary nerve-threads when pressure is made on the protruding eyeball by a firmly tied bandage, are all most valuable considerations for securing a favorable result.

In nerve-section, as usually undertaken, the nerve is either imbedded in a dense fibrous tissue, so that the separation of the cut ends must be very limited unless they are dissected away from each other; or the affected nerve traverses a bone, and, therefore, is difficult of access; or it accompanies large vessels, and it is necessarily dangerous to divide unless isolated by a careful and often tedious dissection. The nerve-attachments of the eye seem especially arranged for easy section. They are clustered together in a very isolated manner. For a long distance they traverse the central axis of an ample cone, which is only filled by an unimportant cellular tissue. In the midst of this, they can be easily, speedily and surely reached without detriment to any important structures, if ordinary care be taken by the operator. The contiguous vessels are all small; consequently, no serious hæmorrhage is to be feared. The very looseness of the fatty tissue upon which the eye rests facilitates the wide separation of the nerve-ends, when the escape of blood from the divided vessels accumulates in the socket.

This blood pressure so disarranges the free ends of these conducting threads that their readjustment is very improbable; and yet we know that this reunion sometimes does take place. This is the only accident that should follow this simple, safe and useful operation.

I do not propose, in this paper, to give a detailed history of optico-ciliary neurotomy; nor the various methods adopted by surgeons to divide or resect these nerves. My object is to give my own personal experience with this operation, from the year 1879, when I first performed it. From that time I have used it annually, as proper cases offered, until my experience now covers eighty-one operations—a sufficiently large number from which to draw safe conclusions.

In my early practice, I tried the various methods of muscle-section to facilitate the exposure of the nerve. I soon found that they complicated needlessly the operative manual, and made a very tedious and serious operation of what should be a very speedy and simple one. When the muscles were tenotomized, and afterward sutured, the tension put upon the threads by the blooded clot accumulating behind the eye-ball would often tear out the sutures, or so stretch them as to produce an ugly strabismus—an after-result that is not satisfactory.

As I was performing this nerve-section only for the relief of pain, I did not see the need of taking away a piece of the optic nerve, nor could I see what special advantage would ensue should I bring this nerve under observation while I was dividing it. Therefore, at a very early date I abandoned all needless manipulation, and adopted the simplest way of finding the nerve with the least disturbance of the eye attachments. I found that the nerve could be easily reached through a conjunctival incision made at the inner or outer canthus, below or above, and parallel with the inner or outer rectus muscle. This method I have exclusively adopted for many years. It makes the operation so easy to both surgeon and patient that it might be utilized in every case of a comparatively good-looking, lost, and painful eye, which would otherwise be condemned to enucleation. It was never intended, by a neurotomy, to replace in all cases the removal of injured eyes. The majority of lost and painful eyes are so disfigured by the accident, or by subsequent inflammation, that they are disfiguring as well as dangerous, and are not worth preserving. There are yet left in the list of lost eyes quite a number so little deformed that no one would willingly give them up were they not the cause of constant suffering. It is for this class of eyes that the operation of neurotomy is especially applicable.

My method of procedure is as follows: A general anæsthetic is always administered. I have used cocaine for socket operations, but it has never given to either myself or the patient the satisfaction expected. For neurotomies, which are quick operations, I use the bromide of ethyl, because of its prompt and evanescent action. By a very few full inspirations of the ethyl ether, during a period that does not exceed one minute of time, the patient is completely anæsthetized. A speculum keeps the lids apart. A fold of conjunctiva is caught up by the forceps, and is cut across in such a way as to make a horizontal incision which extends from the lower and inner border of the cornea to near the caruncula. It lies parallel with the lower border of the inner rectus muscle, and is but little more extended than the conjunctival incision for squint operations. The application of the points of the scissors in this orifice opens the capsule below the rectus muscle. An instrument terminating in two small hooks is passed into the depth of the wound and planted well back in the sclerotic. By drawing upon this instrument, the eye-ball is rotated forcibly outward, which brings the optic nerve, with its ciliary nerve surroundings, within easy reach. The curved enucleation scissors is now introduced through the wound into the socket directly behind the eye-ball. With its closed blades playing the part of a probe, the resistant optic nerve is sought. When it is found, by drawing the scissors forward until the nerve escapes, then opening the blades widely, the optic nerve, with its entire surroundings, can be caught in the jaws of the instrument. The resistance made during the section is proof that the nerve has been seized ; and if the scissors have been properly manipulated it insures the complete division of the entire cluster of nerve cords. As an evidence of this, the closed scissors can now move freely, as a probe in all directions, behind the eyeball without meeting any impediment. To insure this complete severance needs some familiarity with the resistance which the optic nerve makes to the section. The scissors must not be allowed to slide backward during the section, but the jaws of the instrument must be held firmly against the resisting body. The operation is now completed, and the scissors are withdrawn.

In the minute necessary to perform the entire manipulation blood has been pouring out of the divided ciliary vessels. It has been pushing the eye-ball forward, and it has also been escaping out of the wound. If this hæmorrhage be not at once stopped, the eye would become exceedingly prominent, in forced exophthalmos, with quite enough tension to cloud the cornea and threaten its future safety.

Without loss of time, the speculum is withdrawn and a large compress is firmly secured over the eye by a bandage. In one or two minutes consciousness returns and the patient goes to his bed. As the after pains of the pressure bandage are annoying, a hypodermic of morphia is administered before the patient leaves the operating table. Pressure over the eye is kept up for several hours or until all hæmorrhage from the divided vessels has ceased. This heavy compress is exchanged the next day for a simple dry dressing. Blood always infiltrates the conjunctiva and the lids, so that the surroundings of the eye are very much blackened from extravasation. It requires at least two or three weeks before this discoloration is altogether removed.

The pains in the eye disappear promptly with the nerve-section, and in my experience permanent relief is usually secured. The patient has had preserved to him a good-looking eye, that is worth all the risk of having the pain return to it at some future time, when the more radical operation of enucleation, if demanded, can be performed.

Should this second operation not be required, he has been saved the constant thought of having been mutilated, which embitters his whole future life. He also escapes the daily annoyance of using an artificial eye, which gives a lot of trouble, as every wearer of one too well knows.

Too many good-looking, but dangerously painful eyes have been enucleated, when this much preferable operation might have been substituted. I am fully aware of the many accidents which have occurred in the experiences of other ophthalmic surgeons—how hæmorrhage has been excessive; how dangerous and even fatal cellulitis has followed the exposure of the ocular tissues; how the cornea has sloughed, and endless troubles engendered, as the sequel of the operation.

I will only say that, in my large experience, no such accident has happened to me. I may have avoided many of them by using, at all times, sterilized instruments; also by discarding, at an early period, the more serious exposure of the socket tissues by not doing myotomies, nor by being desirous of bringing the optic nerve into view, so as it were to make the section under the eye. I always felt that this bold—I am rather disposed to call it by its proper name, *rash*—dissection invited the serious accidents which afterward followed.

Unfortunately, I am not able to trace all of my cases. Several of them I have seen at intervals of several years after the nerve-section. They had enjoyed life undisturbed by any return of the former pain. Others promised to report promptly should they not be comfortable. From these I have not heard, and therefore presume that they have had no occasion to write. In only four cases coming to my knowledge has it been necessary to perform enucleation.

In suitable cases, I feel assured that neurotomy is far preferable to the mutilation of enucleation. I think that this will be accepted by all without a dissenting voice, if the dangers which some have met with can be avoided. This can be, in a measure, secured by adopting the simpler operation without cutting the muscles, which, when properly performed, is, in my experience, equally effective with the more complicated methods, and with much less risk. It is also an operation which even the most timid patient will accept.

Notwithstanding the dangers ascribed to neurotomy, many of which are avoidable, I think it would be well if those who have discarded this good operation would put it again on their list of available methods.

Knowing its defects, and also familiar with its many advantages, were I required to make a choice between the two operations, enucleation or neurotomy, for a member of my own household, I would not hesitate a moment in the selection and would accept the neurotomy.

CLINICAL RECORDS.

ON A SERIES OF TWO HUNDRED AND EIGHTY-TWO CATARACT EXTRACTIONS.

By J. Blood, M.A., M.D., Late Clinical Ophthalmic Assistant, Adelaide Hospital, Dublin; Surgeon-Major, Bengal Medical Service (Retired).

The practice of ophthalmic surgery in India by European surgeons until recent years was nearly altogether confined to the large Presidency towns, "up-country" surgeons not deeming it expedient to enter on such a delicate field of enterprise as the eye; but nowadays, thanks to the careful curriculum of the student and to the valuable post-graduate courses which medical men can avail themselves of, not to speak of the overland parcels post, which brings the contents of Weiss's shop within easy reach of what were formerly remote lands, medical officers in India are now in a position to undertake with great success all branches of surgery. Surrounded as they are by masses of humanity suffering from all manner and kind of infirmities, among which eye disease forms a large percentage, one can easily imagine what a splendid field exists for acquiring ophthalmic as well as general surgical experience. I do not pose, therefore, as a specialist, but only as a very humble member of the numerous and noble army of "general practitioners."

The results of my operations, performed, with four exceptions, on natives of India, are not anything to be proud of. My object has not been, by selecting the most favorable cases, to show a high percentage of success, but to afford relief from blindness to the greatest number possible. The surroundings and circumstances under which they were undertaken were unfavorable. Hospital accommodation in India, except in the large towns, is very imperfect; the majority of my operations, in order to gain a good light, were performed under a banyan tree or a large white umbrella, and many of the cases, owing to want of space, had to be treated in general surgical words—all good enough, some of you will say, for a mild Hindoo, but let me tell those of you that believe in the old popular fallacy—that you can cut a black man's head off and stick it on again, and that he is all the better for the operation—that a native of India requires more delicate care and attention than his white brother, and that his power of pulling through an illness, whether it be surgical or medical, slight or severe, is distinctly less than that possessed by a European.

Many of the cases are undertaken immediately the patient presents himself, having perhaps accomplished a three days' journey on foot; for if you don't attend to his wants at once, he loses faith and passes on, only to fall into the hands of the native "coucher," a sort of itinerant eye-surgeon, who in his periodical peregrinations manages to relieve credulous folk not alone of their money but also of any hopes of regaining their sight. One of these gentlemen, imbued with an unusual amount of tropical assurance, was exhibiting his handicraft not long ago in Liverpool, out of which city he was forced to beat a hasty and undignified retreat. His instruments and mode of operating are of a primitive character, and that our forefathers, even in the dark ages of surgical antiquity, should have used even some similar method, can hardly nowadays be conceived.

Many of my earlier cases were treated before the introduction of that inestimable boon cocaine, and before I had applied those antiseptic measures which have played so remarkable a part in other branches of operative surgery.

A good deal of warmth has been introduced into the discussion as to whether an iridectomy should form part of the operation or not, some holding strongly to the belief that it is absolutely necessary, others urging in an equally strenuous manner that it should not be employed. It must be taken for granted that each one of us, whatever method he employs, is animated by the desire to do that which seems to him the best for his patients and for the art he practices. With two exceptions I have always done an iridectomy. In the first case I found I could not fully return the iris to its proper position in the anterior chamber, and it looked, on being seen nine months after, as if an iridectomy had been performed; it had remained tucked in the wound, and had become atrophiedn. The second case failed from iritis—probably caused by bruising, —the other eye having previously been operated on successfully by my assistant *with* an iridectomy.

The operation which I perform is the usual one known as the three millimeter flap operation. The following particulars are carried out:

The patient's face is washed with soap and water, the eyelids are everted and washed with a 1 in 5,000 solution of corrosive sublimate, the eye is rendered insensible with a solution of cocaine; this solution as also the atropine solution is not made with plain water, but with a 1 in 5,000 solution of corrosive sublimate.

A very narrow iridectomy is made, the narrower the better. (Mr. Swanzy uses eserine to enable him to effect that object.) Should any bleeding now occur or have previously occurred into the anterior chamber, I carefully and patiently stop it, closing the eye for a few seconds if necessary, but never attempting to proceed any further as long as the view is in any way obscured.

The lens being extracted, each pillar of the coloboma is stroked gently down with a narrow spatula, a drop of atropine solution instilled —this latter step I think of considerable importance, as the dilated pupil is kept out of the way of any remaining lenticular matter. I know of nothing more annoying than to find your iris, on opening the eye on the third day, clinging tenderly to these particles, and doing its best to cause irritation, all of which trouble a drop of atropine tends to avert.

Dressings of pieces of absorbent cotton rung out of corrosive sublimate solution are applied, and the patient remains in bed for two days.

Out of the 282 cases, 237 gained good vision or 84 per cent.; counting 11 that gained *fair vision*, the success would be 88 per cent.

There were 34 *complete failures*, from the following causes:

Iritis	21
Sloughing of cornea	3
Panophthalmitis	6
Detachment of retina	1
Opaque lens substance	3

With one exception these were all cases of hard cataract; one case of fluid cataract (in a lady of 16, of surpassing beauty, who had been blind for ten years, and who would not submit to a needling operation), was removed through a small incision, with a very gratifying result in many ways. She immediately entered the married state, and subsequent domestic ties prevented her having the other eye dealt with.

Twenty-two individuals had both eyes operated on at the same sitting. Of these, 16 individuals gained the sight of both eyes; five lost the sight of one eye from the following causes: three from iritis caused by lenticular matter; one from iritis caused by cutting the iris with a blunt scissors; and one lost an eye from panophthalmitis, the other eye being a perfect success; while one individual lost the sight of both eyes from plastic iritis.

Operating on both eyes at the same sitting is never undertaken except at the express wish of the patient, as it is, of course, not sound surgery.

Anomalies of the Healing Process.—In addition to those I have spoken of as failures, there were a few cases where the healing process was impeded or did not follow the usual course.

There were two cases of delayed secretion of the aqueous, where the anterior chamber was not restored till the fifth day, instead of in a few hours as is usually the case. One is naturally anxious about these cases as there is a tendency in them to proliferation of the capsule cells, and so give rise to secondary cataract.

There were three cases of delayed closure of the wound: *one* of these with bleeding into the anterior chamber (probably from the iris) on the seventh day, and oozing of blood through the wound; *the second* did not close till the tenth day; *the third*, in the corneo-scleral margin, became bridged over with conjunctiva, and was seen four months after in the same state, and with good vision.

There were two cases which presented rather peculiar features. On opening the eye, as usual, on the third day, the cornea was found to be hazy—a sort of finely striated interstitial opacity, the result, I believe, of some stagnation in the lymph channels, which would lead one to think that suppuration had just been averted; these, under eserine, cleared up quickly.

Ulcer of the cornea occurred once, giving much trouble.

Prolapse of the iris and incarceration of it in the wound occurred six times: four almost disappeared after being touched with solid nitrate of silver; two were not benefited, but the defect seemed to give rise to no subsequent discomfort.

Discission of the capsule was performed in several cases, the exact numbers I cannot give, but I should say in about 5 per cent. of the total number; and a needle operation, to break up cortical remains, in about 2 per cent.

In one case these remains were causing such trouble that, on the seventh day, I opened the original incision with an iridectomy knife, and removed nearly the whole of them with a fine curved spatula, and with a most satisfactory result. In another case a piece of capsule was removed from the iris with an iris hook on the twelfth day, through the re-opened incision.

I met with one case, and one only, in which cocaine would not produce local anæsthesia; chloroform was given, which caused a sudden attack of vomiting immediately the section of the cornea was completed, and before the eye could be closed the lens was expelled entire, and with it a minute quantity of vitreous, but the ultimate result was excellent.

In the case of an opium-eater I failed to produce anæsthesia with chloroform, and cocaine not being then introduced, I had to abandon the attempt at operating.

In conclusion, I may state that, in my opinion, there is hardly any chronic disease, with the exception of anæmia, which contra-indicates the operation.—*Liverpool Medico-Chirurgical Journal.*

OVER-PRESSURE IN CHILDREN CAUSING BRAIN MISCHIEF.

By J. A. Diggle, L.S.A., London.

The following cases show the inadvisability of attempting to force children forward in schools without sufficiently considering their different individual capacity for learning.

It is, I am afraid, much too common a cause of children's ailments nowadays, and has not been quite enough considered, I think by parents and teachers. In the ordinary Board School, as at present constituted, every child in each standard must be pushed on, *pari passu*, with all the others, so as to get all, if possible, passed at the examination next ensuing into the standard above. In the first case here noted, the fault, *fons et origo mali*, was with the parents in sending such a young child to school at all, but as both parents were factory workers, and there was only a slightly older boy beside, the child went to school with him.

Both cases were very similar in the outset, but the first was the most severe, and in both I thought at first the illness was enteric fever, the more so as being next door neighbors and residing on the banks of the river, which is very foul and much polluted, and on Sundays when the water is low great banks of festering abominations are exposed.

Case 1. Alf. C., a sharp and more than usually intelligent little boy of only four years and eight months, was seized on April 3d, at breakfast time with sickness and pain in the head. He had been attending school for six months, and being naturally quick, as I have said he had been encouraged to learn and had already reached the final class in the Infant Department and would have been put into the general school but for his age, which forbade it.

When I saw him at 11 A.M., he was in bed, slightly flushed, head very hot and temperature 99.2. Tongue rather foul. Complains of pain in the head, and avoids light. No further vomiting since breakfast. Gave him a mixture of potass. citrat. and tinct. aconiti and calomel, gr. j., with sugar.

April 4th. Passed a bad night, rambling and talking about school. Tongue rather cleaner. Temperature 99.4°. Milk diet. To continue mixture. Night temperature same as morning. Added k. br. gr. ij., aa dose to medicine.

5th. Night passed much the same as last. Lies very quiet and still, but easily roused, and then quite conscious. Temperature 100.2°. Thirsty. Tongue furred but moist. No pain in abdomen. Stool natural. Ordered antipyrin, grs. v., every three hours. Temperature at night, 100°. Been delirious all afternoon. Ordered ice-bladder to head.

6th. Rather better this morning. No diarrhœa. No spots on abdomen. Head, however, very hot, mother having taken off ice bag at 4 A.M., as child slept. To be replaced. To have 5 mins. bromidia (Battle) every two hours. Temperature, 100.2°; night temperature same.

7th. Much better. Fairly good night. Slept four hours, twelve midnight to four A.M. Playing with toys on bed whan I saw him. Temperature, 99.2°. Tongue cleaner. To continue bromidia mixture.

8th. Not quite so well. Ice-bag again neglected to my vexation. To be continued, as also mixture.

9th. Much better. Sitting up playing. Temperature 99°. Ice-bag discontinued. Same mixture.

10th. Improving fast. Not much appetite. Quin., gr. ½, t. d. s.

11th. Up and dressed. Still improving. No headache or pain. Temperature normal. With the exception of a slight cough, all went on well until 14th, when I discontinued visiting.

The good effect of the ice and bromidia was very quickly apparent in this case, as also in the next.

CASE 2. Jno. B., a strong, sturdy, rough lad of just over seven years of age, was a contrast to A. C. in that he was anything but fond of lessons, and rather dull in all subjects except drawing, in which he excelled.

He had failed last year in the examination, and in consequence his teacher had been urgent as to the necessity of his passing this time, and had been, perhaps, rather too sharp on the lad.

Just a fortnight before the examination, on April 21st, he was seized, also at breakfast time, with vomiting and pain in the head.

When I saw him in the forenoon he was lying on a bed-chair, very drowsy, and resenting being roused. Had vomited every few minutes since breakfast, at which he had only drunk a cupful of coffee. Head very hot. Pupils contracted ; buries his face in the pillow. Temperature, 100°.

Ordered cold water cloths to head until ice-bladder could be got, and a potass. citrat. mixture.

April 22d. Sickness relieved. No delirium, but wanders when roused, and talks of his play. Ice to head. Bromidia, m. v., every two hours. Night, much the same. Temperature, 100°.

23d. Much better. More easily roused, and sensible, though when when left to himself lies quiet for hours. Temperature, 99°. To continue bromidia and ice.

24th. Better. Sitting up in bed with his drawing-book. No dullness or drowsiness. Complains of no pain at all. Appetite not good. Quin., gr. ½, t. d. s.

25th. Appetite improved. No bad symptoms. Temperature normal. Playing about the bedroom.

26th. Ceased visiting. Boy going on well.

It seems curious to me that two lads of such opposite temperaments should be so similarly attacked. One sharp and intelligent, though very young and not compelled to learn; the other older and duller, probably harassed by his teacher, and yet both develop almost the same symptoms. I may say that the younger child, a fortnight after I ceased seeing him, had a regular hysterical fit because his mother would not allow him to go to school with his brother, and was in a state of collapse, cold and pale, for two or three hours after.

The rapid improvement under the ice and bromidia treatment was very gratifying, and I have found bromidia especially useful in such cases, and a very reliable hypnotic whenever I have required to prescribe such a medicine.—*The Hospital Gazette.*

BENEFICIAL EFFECTS OF THE BROMIDE OF POTASSIUM IN A CASE OF ACUTE CHOREA AFTER THE MERIDIAN OF LIFE.

Reported to Gaillard's Medical Journal by T. G. Stephens, M.D., Sidney, Iowa.

During last December I was invited to visit a gentleman upward of sixty years, a farmer by occupation, family history good, personal health up to a few days before my call had always been excellent, except when a youth; had, while residing in the State of Indiana, ague several times. Reverting to my subject more closely, without any premonition his right eyelid began to wink; the muscles on the same side of the face jerked; this anomaly continued without any abatement for forty-eight hours, when hemichorea was complete; his speech became thick, had occasionally slight headache, no fever, the urine neutral, tongue furred, habit costive. Prescribed ten grains of calomel, to be repeated every eight hours if necessary until his bowels moved freely. Two days later I was recalled; the disease had become general. Prescribed my favorite remedy in this affection, *cimicifuga racemosa,* which improved his condition very much but did not seem quite sufficient of itself, so sulphate of zinc was added to the treatment, which appeared to better his condition for a few days, when the disease became stationary again, headache returning at intervals.

The zinc was withdrawn and bromide of potassium substituted in thirty grain doses every six hours for two days with slight improvement, when it was increased to forty-five grains every six hours and at the expiration of forty-eight hours the choreic symptoms had almost entirely disappeared, at which time the medicine was gradually withdrawn. He is at present in good health and has worked on his farm all spring and summer. I mention this case because the literature of chorea in the aged is limited, and to show the happy effect the bromide of potassium had in controlling the disease.

TREATMENT OF MIGRAINE WHEN IT ACKNOWLEDGES THE INTERMITTENT FORM.

℞ Quinine sulp. ʒ ii.
Resinæ podophylli (U. S. P.) grs. ii.
Powdered capsicum, grs. x.
Misce et.

Tiat chartulæ No. 4, or capsules. Sig. One to be taken during the early part of the night and another during the after part. The subsequent night the other two doses in the same way, observing as nearly as possible a complete intermission. If the pain should be very severe before or during the treatment, a dose of morphine should be given, at the same time placing the patient's feet in a hot bath. Since the aromatic series, I have been very much pleased with the following treatment in this painful affection.

℞ Quinine sulph. ʒ ii.
Antikamnia, ʒ i.
Powdered capsicum, grs. x. Misce et Tiet.

Chartulæ No. 4 or capsules. To be taken as directed in the above treatment. If the pain should become severe, give ten grains of antikamnia at any time, repeating the dose if necessary, and observing the same rules as in former treatment.

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PHARMACY AND THERAPEUTICS.

The Effect Upon the Offspring of Mercury Administered to Pregnant Syphilitic Women.—Etienne (*Annalde Gynécologie et de Obstetrique*, tome xi., 1892) has entered into an exhaustive research as to the influence exerted upon the health of the offspring by the treatment of the syphilitic mother. His results are closely in accord with those of

Fournier. He finds that the mortality of infants born of syphilitic mothers who have not been subjected to mercurial treatment is enormous —over seventy-six per cent. at birth, and over ninety-five per cent. when the few children born alive are kept under observation. When the mothers have been subject to antisyphilitic treatment, this mortality drops to from eleven to sixteen per cent. If the treatment is pushed during the course of pregnancy, statistics show it is reasonable to hope that very few, if any, of the children will perish. Of ten cases observed by the author, not a single infant died. Eighty per cent. of the infants were born at term. Syphilis exerts its most pernicious influence upon the offspring during the fifth, sixth and seventh months of intra-uterine life.

From personal observation, Etienne concludes that paternal syphilis is distinctly less pernicious in its effect upon the offspring than is that derived from the mother. When the mother becomes infected during the first three months of pregnancy, and is not treated, the results, as regards the offspring, are more disastrous than when the disease is acquired later. In these cases a mortality of one hundred per cent. is reached.

When infection occurs during the fourth and fifth months, the results are somewhat more favorable. When the mother becomes infected during the eighth month, an apparently healthy infant may be born, although in one case reported by the author, in which infection apparently took place in the eighth month, the infant was seemingly healthy at birth, but later developed syphilitic lesions. In all cases of syphilis acquired during pregnancy, prompt treatment was most efficacious. In no instance were any unfavorable results noted of the result of treatment.

In contrast with these conclusions, it is interesting to note that Cassowitz states that of thirty-five syphilitic women who were treated by inunctions, the delivery was normal in all. Of twenty-three treated by inunctions and iodide of potassium, thirty-seven per cent. were delivered before term. Of nineteen treated by iodide of potassium and bichloride of mercury internally, fifteen per cent. gave birth before term. Of seventeen treated by iodide of potassium alone, forty per cent. were delivered before term.—*Therapeutic Gazette.*

EUROPHEN AND EUROPHEN-ARISTOL.—Dr. John V. Shoemaker has lately concluded an exhaustive study of Europhen, with a view to aid in deciding its place in surgical therapeutics. The writer gives a careful review of the work of other observers in this direction, and largely coincides with their conclusions concerning the efficacy of this new remedy. At the same time he gives in detail the results of his own clinical tests with Europhen. These include certain variations in the method of treatment, and involve special therapeutic points which must be regarded as new and important contributions to our knowledge of this medicament.

In the following brief abstract we are unable to present more than an imperfect statement of some of the more sailent points in Professor Shoemaker's clinical experience with Europhen and Europhen-Aristol. For the complete article, the practitioner is referred to the original article in the *Journal of the Amercian Medical Association*, Aug. 6, 1892.

The writer found Europhen to be of value in incised, contused and lacerated wounds, the surface being maintained in a dry and aseptic condition by the simple application of the adherent Europhen powder. In ulcerations the same excellent effects were observed.

In Case I. the Europhen treatment was applied to a chronic, unhealthy leg ulcer in an old man. The edges were callous and the lesion was surrounded by a zone of lividity. Many remedies had been used with little or no effect. First cleansing the surface with a weak, lukewarm solution of carbolic acid, the writer applied Europhen-Aristol in powder, covered with borated absorbent cotton, and a bandage to the knee. "A highly gratifying effect" [says the writer] "was produced. Within 10 days the character of the sore was completely changed. Healthy granulations made their appearence; a course of repair was inaugurated which proceeded steadily, and at the end of four weeks the surface was soundly cicatrized."

Case II. Girl, æt. 19; scrofulous ulcer of the neck; on the opposite side a cicatrix indicated a former ulceration. The ulcer was treated with Europhen powder and borated cotton. Suppuration soon diminished; grayish exudation disappeared; granulations became healthy, and in three weeks the patient was discharged healed.

Case III. A woman, æt. 26; chronic lupus vulgaris with nodules and ulcers. Had been treated by many physicians, and by almost every known method. Twice or thrice daily Europhen was freely dusted over the ulcerated surface, which was daily irrigated with carbolic solution. Amendment was manifest at the end of the week; in three months she was discharged cured. In another case, of still greater chronicity and obstinacy, an equally favorable result was obtained.

Case IV. A man, æt. 68; chronic ulcer of right thigh with the character of a superficial epithelioma. Curetting and cauterizing of no avail; Europhen powder applied without much improvement. Then a preparation of ʒ iii. to ʒ iv. of Europhen to ʒ i. of fat was employed. The pain subsided; healthy granulations appeared, and in about four months the ulcer was healed.

Case V. A woman, æt. 50; epithelial ulcer on the left ala of the nose; deep red color; raw, but dry surface and hardened edges. Aristol was used to some advantage, but the ulcer remained open and irritable. Europhen gave about the same result. The two remedies were then used alternately for some weeks, but still the condition remained comparatively unchanged. Finally, the mixture of equal parts of Europhen and Aristol was used, when the ulcer began to gradually but steadily heal from the bottom, and in about ten weeks a well-marked cicatrix had formed.

Case VI. Sycosis of upper lip, which was red, hot, swollen and surmounted by papules, pustules, scales and crusts. I removed the crusts with oil of ergot; washed the part with a weak lotion of hamamelis, and applied a 10 per cent. ointment of Europhen. This was used several times daily and effected a complete cure.

Case VII. I found that in several cases of carbuncle, after the necrosed tissue had been expelled. Europhen powder aids the work of repair. Europhen-Aristol gave the same good results.

Case VIII. A man, æt. 18; papular acne of face and back, interspersed with comedones. External remedies had thus far failed. A suitable diet, and the use of Europhen ointment (ʒi. to ʒii. to ℥i. excipient), effected a cure.

Case IX. Middle-aged woman; typical example of second stage of rosacea; cure effected by a lotion of Europhen, glycerine and aq. sp. odorat.

In several cases of erysipelas, cure followed the use of Europhen ointment, 10 to 20 grains to the ounce. In the dermatitis of rhus poisoning, also, the remedy was effective. In herpes progenitalis, herpes zoster and seborrhœa oleosa, Europhen in powder gave the best results.

The author derived excellent effects from the use of Europhen in eczema of the hand and feet [Case XI.] was promptly cured by Europhen Aristol. Case XII. refers to a psoriasis of many years' standing, in which Europhen-Aristol was used. Dr. Shoemaker states that he had already found Aristol useful in this condition, but that Europhen-Aristol produced a more rapid and decided effect. In the lesions of syphilis he found both Europhen and its compound valuable. The author highly commends Europhen as a dressing which is harmless and agreeable to use, and as such is well adapted to gynecological practice and the diseases of children. He thought that the mixture of Europhen and Aristol added to the efficacy of each. Europhen in powder acts more effectively in some cases than Europhen in ointment. The strength of ointments may be increased or diminished according to the needs of the case. In the experience of the author, the proportion of one drachm of Europhen to the ounce of fat makes an efficacious ointment.

ENURESIS.—In the treatment of enuresis, for many years I used the remedies as directed in standard works, with more or less success and satisfaction, but in recent years I have found the combination herewith below given to be more efficacious and satisfactory in every way than any other (of the many) preparations I have used :

℞. Extr. Rhois Aromat. Fluidi..................ʒ ii.
Liquoris Potassii Arsenitis...................gtt. xvii.
Santoninæ (solutæ)...........................gr. i.
Atropinæ Sulphatis..........................gr. $\frac{1}{50}$
Syr. Calcii lactophosphatis....................q. s. ad ℥ iv.
M. & Ft. sol.

S.—Half to one teaspoonful, three times a day just after meals.

Of course, special complications, if such exist, should receive appropriate treatment, while the general hygiene of the patient should receive careful, intelligent and persistent attention.

Of course the remedy should be continued—though in diminished doses—for several months, or longer, after the patient has ceased to wet the bed.—Q. C. Smith, M.D., Austin, Texas, July, 1892.

TREATMENT OF HAY FEVER AND HAY ASTHMA.—The fact that many radical cures of this malady have been effected by local treatment of the nasal passages would seem to indicate that pathological conditions of the nasal passages are frequently the cause of the symptoms manifested.

The most rational method of constitutional treatment is one which elevates the tone and increases the normal resistance of the pulmonary nerves. Tonics such as iron and arsenic, and the regulation of the bowels for a few weeks before the period of onset, will do much to lessen the severity of the attack.

Local treatment may be radical or palliative. Every case should be carefully examined for abnormalities of the nasal passages. Hyperplasia of the mucosæ, and especially thickening over the turbinated bones, should be reduced by the galvano-cautery. A deviated septum should be straightened, and bony spiculæ removed.

For palliative measures, various inhalations are used. Perhaps none have proved more efficient than peroxide of hydrogen, though eucalyptus, creosote and camphor are sometimes of service.

In the paroxysms of hay asthma a combination of the fluid extracts of quebracho, Grindelia robusta, and lobelia, given in hot water and brandy, will often afford relief.—*Med. Age.*

ABSTRACTS.

Charcot-Robin's Crystals.—Leichtenstein (*Deut. med. Woch.*, June 23, 1892) says that the intestinal parasites are certainly the most frequent cause of the presence of these crystals in the fæces. They were almost always found in 272 cases of anchylostomum, and were only absent in a few cases where these worms occurred in small numbers. In five cases of anguillula intestinalis they were always seen. They are fairly often found in cases of ascaris and oxyuris, and are frequently present in tænia media canellata and solium. In one case of tænianana—the first recorded in Germany—the author did not find any of these crystals. They are also often present in cases of trichocephalus, but only in small numbers. There is no doubt that the formation of these crystals is casually connected with the presence of worms. The author shows that the crystals are formed in the same situations in which the parasites abound. The crystals are important in diagnosis. If they continue in the fæces, parasites are still present. The author then cites a case in which, after the use of thymol, 335 female and 140 male anchylostoma were expelled —the females are generally driven out more easily than the males. No eggs could be found in the fæces, but the crystals were still present. After the administration of the extract of male fern 75 more male worms came away. On the other hand, if the whole of a worm is expelled the crystals disappear. The author gives the morphological and chemical evidence to show the identity of these crystals with those described by Charcot and Robin. They are not the crystals of fatty acids, etc. The conditions under which the latter are found are quite different to those prevailing in helminithiasis where the stools are otherwise healthy. Again, in the case of parasites which infest the large intestine only, and can therefore have no action on the emulsion and absorption of fat, these crystals are present. The exact chemical nature is still doubtful. The author then refers to some cases of hydatid of the lung in which echinococcus cysts and also Charcot-Robin's crystals were found in the sputum.

Cholecystotomy.—Hans Kehr (*Centralbl. f. Chir.*, August 6, 1892) relates a case of gunshot wound of the gall bladder. On January 22d of this year the patient, a strong, healthy man, aged 30, received a shot from a revolver, at a distance of ten paces. The shot entered the abdominal wall at the outer margin of the right rectus abdominis muscle, about 6 cm. above the level of the umbilicus. The injury caused the man to fall down, and gave rise to a burning pain in the whole abdominal region. On examination with a sound it could not be discovered if the ball had gone into the peritoneal cavity. A laparotomy was now performed, an incision being made by prolonging the shot wound upward and downward. The incision was carried down to the fascia, but no aperture could be seen. Vomiting now occurred, and on pressing upon the abdomen some omentum protruded through an opening in the fascia. This made clear the fact that the peritoneal cavity had been opened. The incision was deepened and the abdominal cavity well opened. A quantity of blood-stained yellowish fluid resembling bile was now seen in the cavity. This was sponged out and the liver examined, and found to be uninjured. The apex of the gall bladder was found to be shot through, its mucous membrane was prolapsed through the aperture, and bile was escaping into the peritoneal cavity. The cavity of the gall bladder was examined, but the ball could not be felt. The posterior abdominal wall was seen to be suggillated, and the ball was felt lying imbedded in the muscles of the back, having passed over the right kidney. The colon was examined and found to be uninjured. The margins of the wound in the gall bladder were trimmed and then united by a series of superficial and deep sutures after Czerny's method. To effect this a transverse incision had to be made owing to the distention of the intestinal coils. The gall bladder was then dropped back into the abdominal cavity, all bile sponged out, and then the abdominal walls closed with suture. Forty-eight hours after the operation well-marked icterus developed, owing to the absorption of bile from the peritoneal cavity. No peritonitis took place. This shows that the introduction of bile itself into the peritoneal cavity is not a cause of peritonitis; but for this to take place staphylococci and streptococci must be introduced. Four weeks after this the patient was quite well and went home, the ball still remaining in the muscles of the back, but producing no symptoms. Kehr says that gunshot wounds of the gall bladder are very rare. Courvoisier has mentioned six cases. Of these two died after ten and fifteen hours. A third had a bile fistula and died from pyæmia after six weeks. A fourth died from sepsis after obstruction of the gall bladder and perforation of the colon.

CANCER OF VAGINA; EXTIRPATION OF HEALTHY UTERUS.—Mackenrodt (*Centralbl. f. Gynäk.*, No. 27, 1892) described at the June meeting, of the Berlin Obstetrical Society, a case which had excited some discussion. A patient, aged 57, had cancer of the posterior vaginal wall, which reached as far as the insertion of the vagina to the cervix. At this point the operator, in endeavoring to remove the diseased part of the vagina, could not feel sure that he was cutting into healthy tissue at a safe distance from the limits of the growth. When as much was cut away as seemed possible, nothing was left of the posterior vaginal wall except a small piece, three-fourths of an inch broad, next to the perineum. The entire anterior layer of Douglas's pouch was also removed, as it was infected. Hence a hole remained large enough to admit the fist. This could not be closed without total extirpation of the uterus, which Mackenrodt did without scruple, as he was not sure that the cervix was not infected close to the posterior fornix. After removing the uterus, he found that the anterior vaginal wall could readily be fixed by sutures to the remains of the posterior wall, so that the defect was readily closed in. The uterus, which bore every sign of senile atrophy, was found to be entirely free from disease. Veit contended that removal of the uterus for plastic reasons was not justifiable. In cases where hæmorrhage could not otherwise be checked, or where infection of the uterus was evident, extirpation was allowable. In Mackenrodt's case, the hole which opened into the peritoneal cavity might easily have been closed by an iodoform gauze tampon. The age of the patient contraindicated a severe operation. Mackenrodt insisted that extirpation was justified in his case. The uterus was of no service to her, and its removal was not so difficult nor so dangerous as in a younger subject. As the growth came close to the cervix, there was strong presumption that the uterus might be involved in the cancer. Plugging the hole with iodoform was a very unsatisfactory proceeding.

NARCOSIS IN OBSTETRICS.—Dührssen (*Berlin klin. Wochenschr.*, No. 15, 1892) considers that an anæsthetic is of great diagnostic as well as therapeutic value. The patient (often much excited) can be kept quiet by a few drops of chloroform while certain important factors in labor are being ascertained, such as the frequency of the fœtal heart sounds. Primiparæ are often very troublesome to explore, and it is then only by the aid of anæsthetics that the obstetrician can make sure whether the head has already entered the pelvic cavity. Narcosis is valuable for the timely diagnosis of occipito-posterior and transverse presentations. In explorations where the entire hand must be introduced into the uterus, anæsthetics are of course indispensable. For therapeutic purposes narcosis is needed for turning, especially combined external and internal version, for detaching adherent placenta, manual removal of ovum and membranes in abortion, reposition of impacted tumors during birth, the management of prolapsed foot in breech presentation, and turning in incomplete dilatation of the os in multiparæ. In irregular contractions of the uterus chloroform often hastens labor. Sepsis is, in Dührssen's opinion, a contraindication for anæsthetics, and deep or long-maintained narcosis is dangerous in cases of eclampsia. It should only be induced, in such cases, to facilitate rapid delivery by operation. Tetanus uteri is also a contraindication. In acute anæmia a very little chloroform will take effect. When chloroform is given, Dührssen advises the obstetrician to get the patient well under, and then to leave the mask in the charge of the midwife, who must from time to time pour a few drops into it.

UTERINE FIBROID AND SYPHILIS.—Prochownick (*Deutsche med. Wochenschrift*, No. 7, 1892) has distinctly traced a relation between constitutional syphilis and fibromyoma of the uterus in certain cases which he has reported. The administration of mercury and iodides led, in these cases, to a distinct, though not very marked, diminution in the size of the tumor, while pain and flooding disappeared. To the objection that these so-called fibroids might have been gummatous deposits in the uterus, he replies that the hardness and other characters of the tumors all indicated fibroid disease, while there were no signs of breaking down and no cicatricial contractions on the surface of the tumors, such as are observed in gummata. In two cases of fibrid disease, where the patients were free from syphilis, iodides and mercury did no good whatever. Prochownick has no belief in any specific action of these drugs on fibroids. On the other hand, he finds that syphilis may set up chronic metritis and endometritis. Such cases defy the curette and other kinds of local treatment, but may speedily be cured by antisyphilitic remedies. Prochownick is not inclined to attempt any explanation of the origin of myoma uteri. He inclines to the theory that the germs of myoma lie dormant for years, and set up a tumor in response to some undetermined stimulus which most probably arises in the blood-vessels.

SEVERE SECONDARY SYPHILIS: PREMATURE DELIVERY: MULTIPLE MALFORMATIONS OF FŒTUS.—Toujan, of Toulouse (*Annales de Gynéc. et d'Obstet.*, July, 1892), was called in on November 20, 1891, to a primipara fourteen hours in labor. She had been married on May 23d, and the last period was seen a month after marriage. Her husband had a hard sore on the lower lip when he married. She was soon infected, roseola appeared, and her hair began to fall. At labor the cervical and inguinal glands were found large and indurated ; there was a number of mucous tubercles on the vulva, and a cicatrizing ulcer on the lip. When Dr. Toujan arrived the body of the fœtus was delivered ; the membranes had yielded nine hours previously. In making a very gentle effort to extract the fœtus, he tore off the trunk from the head ; the cord was not torn. He divided the cord, introducing a speculum, and, following the cord, reached the placenta and a soft white mass, evidently the head. As the placenta was the more accessible, he removed it by aid of ovum forceps. It adhered to the lower segment of the uterine wall. A crochet was fixed to the head, which was seized with the ovum forceps and delivered without damage to maternal structures. The internal and outer genitals were thoroughly washed with a sublimate solution. The fœtus was putrid. Its cranium was perfect, but hardly any brain had developed. The face seemed covered by a veil; the buccal, nasal and ocular orifices could not be detected. The neck and trunk showed numerous malformations. The atrophy of the facial arches was evidently due to syphilis. The mother, treated with specific remedies, made a good recovery.

Hydatid of Pelvis.—C. Fournel (*Arch. de Tocol.*, June, 1892) operated on a case of hydatid of pelvis in a patient aged 28. The walls of the cystic tumor, which was removed, bore the characters observed in true hydatid cysts, but no traces of the characteristic parasite were found. It was probably a vaginal hydatid, but as the evidence was not conclusive, Fournel prefers to call it a parovarian cyst, burrowing downward. At the operation much adherent intestine and omentum were detached, and the cyst was found lying behind the uterus and a little to the left. It was enucleated, and contained colloid masses of a pearly white color. There was no pedicle; some bleeding vessels were secured, the peritoneum was washed out, but bleeding from the site of enucleation continued. The pelvic peritoneum was therefore plugged, after Mikulicz's method. Eight strips of iodoform gauze (20 per cent.), each four inches wide and twenty inches long, were fastened one to another and packed into Douglas's pouch. The outer extremity was left dependent from the lower angle of the abdominal incision. There was much shock after the operation. On the eighth day the tampon was removed. Enough blood to fill a tumbler escaped from beneath it. The patient recovered. Fournel concludes that the tampon is of value, because if it acts as a hæmostatic it fulfills its purpose, and if it does not it allows the hæmorrhage to be seen, as it soaks rapidly. In the latter case, other steps can be taken to check the hæmorrhage. At least it saves the surgeon from reopening the abdomen to arrest a hæmorrhage which proves imaginary.

Poehl (*Bull. de l'Académie des Sciences*, July 25, 1892) makes a further contribution to our knowledge of spermine. He is convinced that the activity of Brown-Séquard's injections is due to this substance. Spermine is found not only in the testicles, but in all glandular organs, especially in the pancreas, which contains large quantities. Some Russian physicians have made experiments on the effects of hydrochlorate of spermine. Their results lead them to consider this substance as quite free from danger, if used with care, and to act as an excellent nervine tonic. Hydrochlorate of spermine acts on the body after the manner of a true ferment, producing an increased rapidity of oxidation in the tissues.

Indications for Thoracocentesis.—In an interesting paper upon this subject in the *Rev. de Therap. Méd. Chirurg.*, Professor Potain disputes Verneuil's assertion that thoracocentesis converts a serous into a purulent exudation. He concedes that operations for empyema are more frequent now than in the past, but does not hold thoracocentesis responsible for this, and does not regard empyema as a more common disease than formerly. Thoracocentesis opens to view many purulent exudations which formerly ran their course unnoticed, but it never produces them, if properly performed.

Four factors must be considered in the performance of thoracocentesis: First, the presence of functional disturbances. Second, the quantity of exuded fluid. Third, the duration of the exudation. Fourth, the nature of the fluid.

Functional Disturbances.—Considerable dyspnœa is an indication for thoracocentesis, because it usually points to the existence of a large quantity of fluid. It may, however, be due to other causes, such as capillary bronchitis, miliary tuberculosis, etc. In such cases the performance of thoracocentesis must hinge upon the question whether the dyspnœa is due to the exudation or the accompanying complications. Dyspnœa, moreover, is an unreliable symptom; it may be completely absent, even when the quantity of fluid is excessive. The same applies to cyanosis. As regards the tendency to syncope, still less reliance can be placed upon this symptom, because it frequently appears too late to serve as a danger signal. In general, functional disturbances are unreliable signs; but when they occur in a case where positive indications for operative interference exist, they should impel us to make haste. Finally, in exceptional cases, if a careful study of the existing conditions shows that the disturbances are actually the result of the exudation, they may serve as indications for thoracocentesis, even if for other reasons the operation had not been attempted.

Quantity of Fluid.—A profuse accumulation of fluid demands thoracocentesis for two reasons: first, because the danger of syncope or asphyxia in general is in direct relation to the quantity of fluid; second, because the long time required for absorption to take place increases the danger.

The quantity of fluid can be estimated in a general way by determining its upper limit. This, however, is not sufficient; we must also determine the lower border of the diaphragm, the distention of the thoracic walls, the displacement of the mediastinum, and the compression of the lung. As long as the fluid does not reach to the level of the clavicles, the quantity of exudation need not enter into the question of an operation.

If, notwithstanding that the level of the fluid extends to the clavicle, there is no displacement of the diaphragm or mediastinum, no marked distention of the chest, and the lung occupies a considerable space in the thoracic cavity, the operation may be postponed. If, however, the lung is entirely compressed, especially when the thoracic cavity is distended, an immediate operation is indicated.

The age of the fluid may become an indication for thoracocentesis, even when the quantity of exudation in the pleura is moderate or slight. The exudation reaccumulates after evacuation, if it is recent; on the other hand, late operation is sometimes attended with serious dangers.

The fluid should therefore be removed if no hope exists that it may be absorbed by medicinal treatment. Authors who have written upon this subject have designated three weeks as the limit. It is a matter of difficulty, however, to positively determine the age of an exudation, inasmuch as the development of the effusion does not always correspond with the beginning of the disease.

The nature of the fluid can be determined with certainty by puncture. Without resort to this we deal only with presumptions, but these are sufficient to indicate a puncture, which according to the case may be simply exploratory, or at the same time serve to evacuate the fluid.

After thoracocentesis has been decided upon, it must be determined to what extent the contents of the pleural cavity are to be evacuated. In the majority of cases the complete emptying of the pleural cavity is attended with many grave dangers. On the other hand, the evacuation of a small amount of fluid may be useless if a large exudation be present. As a rule about one-half of the fluid should be removed.

Potain concludes as follows:

1. Thoracocentesis, if performed properly and at the right time, never converts a serous into a purulent exudation.

2. The increase of cases of purulent pleurisy, which has been attributed to thoracocentesis, is rather an apparent but not an actual fact.

3. The indications may be based upon precise and fixed rules.

4. Thoracocentesis should always be considered as a serious procedure, which should be performed under the necessary precautions.

5. It is as great an error not to resort to the operation as it is to perform it uselessly or improperly.—*International Journal of Surgery.*

At the meeting of the American Association of Obstetricians and Gynecologists, St. Louis, September 20–23, 1892, Dr. George H. Rohé, of Catonsville, Md., read a paper upon "The Relations of Pelvic Disease to Psychical Disturbances in Woman."

The author pointed out the frequency with which bodily conditions influenced mental states. Thus a torpid condition of the intestines, Bright's disease, putrefactive processes in the intestinal canal, etc., might give rise to melancholia and other disorders of the mental functions. It is not irrational to suppose, likewise, that diseases of the female sexual apparatus would have a not inconsiderable influence in the production or perpetuation of mental disorders. As a contribution to the knowledge of the subject, the following report was submitted :

In a hospital containing 200 insane women, 35 were subjected to vaginal examination, and 26 found with evidences of pelvic diseases. In 18 of these the uterine appendages were removed with the following results :

Sixteen recovered from the operation and 2 died. Of the 16 recovered, 3 have been discharged from the hospital completely restored, both physically and mentally. In 10, considerable improvement followed the operation in both physical and mental conditions, and in 3 the operation was of too recent a date to allow any definite expression of opinion.

The mental disorder present in the 18 cases was melancholia in 6 cases, simple mania in 1, puerperal mania in 4, hysterical mania in 1, periodic mania in 2, hystero-epilepsy with mania in 1, and epilepsy with mania in 3.

The author, basing his opinion upon his experience, concludes as follows :

The facts recorded demonstrate, first, that there is a fruitful field for gynecological work among insane women ; second, that this work is as practicable and can be pursued with as much success in an insane hospital as elsewhere; and third, that the results obtained not only encourage us to continue in the work, but require us, in the name of science and humanity to give to an insane woman the same chance of relief from disease of the ovaries and uterus that a sane woman has.

Cancer of Cervix Uteri Associated with Pregnancy.—So far as the treatment goes, these cases may be classified in three series :

(1) Cases where the disease is confined to the uterine tissue ; no infiltration in vagina, bladder, rectum, or broad ligaments, and uterus has

not reached a size incompatible with vaginal hysterectomy, say up to end of fourth month of pregnancy.

(2) This series comprises all cases presenting the features of first series, except that removal of uterus by vaginal hysterectomy, because of late period of gestation, after beginning of fifth month, is precluded.

(3) This series comprises all cases at any period of gestation where total extirpation is impracticable.

In the management of first class, associated with early pregnancy, abortion, either accidental or induced, has already been shown to be surrounded by many dangers, although successfully employed by a few operators as a preliminary to vaginal hysterectomy.

High amputation of the cervix, in the majority of these cases, brings about abortion, and is even less successful than in the non-puerperal uterus, in regard to final cure.

Briefly, the treatment of carcinoma of the uterus may be summarized as follows: In all operable cases, where the pregnancy is not advanced beyond the fourth month, do a vaginal hysterectomy at once.

In all operable cases, between fourth month and term, as a rule complete extirpation of the uterus by Freund's method, as modified by Zweifel, and in operable cases delivery at term, or a supra-vaginal hysterectomy of pregnant uterus (Porro's operation).—*D. Vanderveer in Annals of Gynæ. and Paediat.*

THE NASAL DOUCHE.—Dr. L. A. Dessar, of New York, in a paper on this subject, gives the following rules to be observed in the use of all nasal douches:

1. The handkerchief should not be used for at least ten minutes after douching, inasmuch as in blowing the nose any fluid remaining in the nasal passages may, by a Valsalva action, be forced into the Eustachian tube.

2. After douching, it is advisable for the patient to remain indoors, so as to avoid exposure to the cold air.

3. During the proceeding the patient should not be disturbed or excited, as this may give rise to an involuntary attack of sneezing, coughing, or swallowing, and thus render it possible for fluids to enter the middle ear.

4. Before beginning the douching a careful examination should be made to see whether both nostrils are free. If one of them is found to be obstructed, the douche should be used on the affected side.

5. Plain water should never be used for douching, as it loosens the nasal epithelium. The addition of a small amount of sodium chloride prevents this action.

6. Concentrated solutions should never be used as a douche.

7. It is not advisable to douche the nose more than three times daily, as a rule; its application morning and evening is sufficient.

8. The quantity of fluid introduced should not exceed ten ounces, the average amount varying from five to ten ounces.

9. The fluid should always be *lukewarm.*

In cases of extensive adenoid growth or tumors of the pharyngeal vault, the douche, if employed at all, must be used with caution. There are also cases in which the patient experiences sharp, cutting pains in the region of the ear during douching, and these may be of sufficient severity to render it necessary to dispense with its use.—SATELLITE, in *The International Journal of Surgery.*

GOOD ADVICE REGARDING CHOLERA.—The following is an abstract from a circular distributed in large numbers by the New York Board of Health. It was recently commended by Dr. Jacobi as containing more valuable advice regarding the method of propagation and prevention of cholera than could be found in an equal space in any other place:

"Healthy persons 'catch' cholera by taking into their systems through the mouth, as in their food or drink, or from their hands, knives, forks, plates, tumblers, clothing, etc., the germs of the disease, which are always present in the discharges from the stomach and bowels of those sick with cholera. Thorough cooking destroys the cholera germs; therefore: Don't eat raw, uncooked articles of any kind, not even milk. Don't eat or drink to excess. Use plain, wholesome, digestible food, as indigestion and diarrhœa favor an attack of cholera. Don't drink unboiled water. Don't eat or drink articles unless they have been thoroughly and recently cooked or boiled, and the more recent and hotter they are the safer. Don't employ utensils in eating or drinking unless they have been recently put in boiling water; the more recent the safer. Don't eat or handle food or drink with unwashed hands, or receive it from the unwashed hands of others. Don't use the hands for any purpose when soiled with cholera discharges; thoroughly cleanse them at once. Personal cleanliness and cleanliness of the living and sleeping rooms and their contents, and thorough ventilation, should be rigidly enforced.

"The successful treatment and the prevention of the spread of this disease demand that its earliest manifestations be promptly recognized and treated; therefore: Don't doctor yourself for bowel complaint, but go to bed and send for the nearest physician at once. Don't permit vomit or diarrhœal discharges to come in contact with food, drink, or clothing. These discharges should be received in proper vessels and kept covered until removed under competent directions. Pour boiling water on them, put a strong solution of carbolic acid in them (not less than one part of acid to twenty of hot soapsuds or water). Don't wear, handle, or use any articles of clothing or furniture that are soiled with cholera discharges. Pour boiling water on them or put them into it, and scrub them with the carbolic acid solution mentioned above, and promptly request the health board to remove them. Don't be frightened, but do be cautious, and avoid excesses and unnecessary exposures of every kind."

Rigor Mortis in its Relation to Death from Poison.—The *Wiener Medicinische Presse* publishes a paper read by Professor A. Paltauf before the Association of German Physicians at Prague on some experiments he had made to show the casual connection between rigor mortis and deaths from poison. For the purpose of these experiments such poisons were used as were known to exert a certain influence on the muscular system, either by directly acting on the muscular substance or indirectly by affecting the nervous system. Among the poisons belonging to the first series curare always considerably delays the occurrence of rigor mortis. Among those acting on the central nervous system, strychnine, picrotoxine, camphor, and the salts of ammonium accelerate the occurrence of rigor mortis. This acceleration is still more increased by artificially prolonging the stimulation of the muscular system, but is again arrested on the occurrence of paralysis. Veratrine and physostigmine cause only a slight acceleration of the rigor mortis, but with caffeine and its chemical derivatives—the rhodan salts—this acceleration becomes considerable. To study the influence of the nervous system at the time of occurrence of the rigor mortis, Professor Paltauf divided the nerves and the spinal cord, with the result that the more a muscle had been stimulated by the poison the sooner was the rigor mortis observed, independently of its connection with the spine, if such connection existed. The reaction of the rigid muscles was in the case of many poisons, as has been generally believed, acid. Other poisons, however (such as camphor, ethyl-theobromine and the rhodan salts), gave, contrary to the general assumption, an alkaline reaction. This alkaline reaction affected, however, only the anterior portion of an animal in which after the poisoning the cord had been divided. The posterior part of the animal, in which the rigor mortis was delayed, showed the usual acid reaction until the alkaline reaction of putrescence took place. Where the reaction of the anterior portion of the animal was alkaline it often became, after the reduction of the rigidity had passed off, neutral or slightly acid before putrescence once more made it alkaline. Division of a single nerve had the same result, and it was possible to cause either alkaline or acid reaction in the various muscles of one extremity by leaving the nerve entire or dividing it. Professor Paltauf also approached the solution of the question of the existence of a cataleptic rigor mortis. He found that the convulsive muscular contractions of an animal poisoned by camphor and suddenly killed by strangling led to immediate rigor mortis, and he therefore believes in a cataleptic rigor mortis.—*Lancet.*

EXAMINATION OF THE BLOOD FOR GONOCOCCI.—According to L. Jullien gonococci are found in the blood not only in cases of gonorrhœa which are complicated by rheumatic affections, but also in those which are complicated by cystitis and orchitis. This view has been disputed by Welander, Aubert, Roux, and others. F. Trapesnikoff (Medycina, 1892) has examined the blood in thirty-two cases where gonococci were present in the discharge, the gonorrhœa being complicated by epididymitis, orchitis, cystitis, prostatitis, arthritis and paraplegia. He failed, however, to find gonococci. His conclusions are as follows:

1. In cases of gonorrhœa where the complications mentioned by Jullien were present no gonococci occurred in the blood.
2. Without denying the possibility of gonococci entering the blood, their presence can be much less frequently determined microscopically than Jullien has stated.
3. The presence of gonococci in the pus in gonorrhœal arthritis and other complicating affections may be due to the entrance of microbes in the lymph channels.
4. In cases where the direct action of gonococci cannot be demonstrated, the complications of gonorrhœa are brought about either by the extension of the inflammatory process *per continuatem*, or through the agency of toxines.
5. The constant occurrence of gonococci in pus cells and leucocytes is not available in the differential diagnosis of this microbe.

HYDROCEPHALUS OF SYPHILITIC ORIGIN.—Heller (*Deutsche medicin. Wochenschr.*, 1892, No. 26, p. 608) has collected from the literature sixteen cases of hydrocephalus, in which a history of syphilis could be definitely traced, and adds a case under his own observation. He therefore issues the injunction that in every case of hereditary syphilis the possibility of the development of hydrocephalus should be borne in mind, and that, in every case of hydrocephalus, a history of hereditary syphilis should be inquired for. If a diagnosis of hereditary syphilis is at all probable, energetic antisyphilitic treatment is at once to be instituted.

SANITARY.

The Garrison of the Human Body.—Among the topics discussed by Prince Krapotkin in an article on recent science contributed to the *Nineteenth Century*, there is one of extraordinary interest, namely the incessant conflict going on between the micro-organisms that invade and those which defend the living body. Of all the discoveries made of late years by biologists, none is more striking than the demonstration that almost all infectious diseases may be traced to foreign bacilli, whose intrusion is resisted by a militia of resident micro-organisms known under the general name of leucocytes, the function of which is to attack, swallow, digest, neutralize or expel the alien and noxious microbes. The outcome of this ceaseless struggle within the body is on the one hand health and life, and on the other disease and dissolution.

So far, we know more about our assailants than our defenders. Bacteriology, the branch of science which deals with the germ theory of disease, may be said to have been founded about the end of the fifties by Pasteur's researches into the fermentation of beer and wine and Virchow's investigations into cellular pathology. Since then, although some alleged discoveries have been confuted, many have been verified, and we indisputably know a great number of micro-organisms which are capable, under certain circumstances, of producing certain specific maladies. For example, cholera, typhoid fever, and gastric affections generally; malaria and influenza; tuberculosis, leprosy, and cancer; diptheria, measles, and scarlet fever, rheumatism, smallpox, rabies and tetanus have been traced to separate microscopical beings. The photograph of each separate bacillus may be found in the text books; its mode of life, and very often its methods of reproduction, have been carefully studied, both in the animal body and in artificial cultures; subjected also to minute scrutiny have been the morbid effects which it produces when introduced into the bodies of various animals. In a word, the germ origin of infectious diseases can no longer be described as a theory; it is a fact.

Relatively backward is our knowledge of the means of combating infectious micro-organisms. Most of the specifics which once awakened hope have proved, in the long run, as ineffective against the bacilli themselves as the specifics proposed by physicians have proved against the resultant maladies. The more the study of bacteria advances the stronger is the tendency to recognize that, as sanitary measures are the most effective precautions against the risks of infection, so a healthy body which is itself capable of checking the development of morbid micro-organisms is the best means of combating them. But what is it that permits a healthy body to resist invasion by morbid microbes? We know the invaders; but what is it that renders them highly noxious in some cases and quite inoffensive in some others? To this question cannot yet be given an answer which commands the universal assent of biologists. The broadest and most ingenious explanation of immunity thus far put forth is the theory elaborated in 1883 by Elie Menchikoff, which represents an extension of the leading principles of the struggle for life to the microscopic constituents of the animal body. There exist in the body of man, and of all vertebrates, besides the cells which constitute the animal tissues, a number of free cells, the white corpuscles of blood and lymph and the so-called wandering cells of the tissues. Four different varieties of these free cells, collectively known as *leucocytes*, have been described, the distinction between them being chiefly based upon the shape and the numbers of their nuclei. It appears that the leucocytes of both the higher and the lower animals have all the distinctive features of simple amœbæ. They protrude pseudopodia or feelers, and they move about, and, like amœbæ, they are endowed to a high degree with the capacity of ingesting all kinds of small granules which they find in their way, including various smaller micro-organisms. In some cases the bacilli thus ingested are *digested*, that is, transformed into a soluble matter, which is assimilated by the protoplasm of the leucocytes.

In other cases the bacteria are for some time kept alive within the leucocytes, and if the latter are placed in conditions unfavorable for themselves but favorable for the invading microbes, the invaders develop and are set free. In still other cases the leucocytes contribute to the defense of the body by driving the hostile bacteria out of the organism through the skin. Transpiration is a familiar instance of the last-named process. Investigation has also demonstrated that the efficiency of the leucocytes varies greatly in different members of the same species of animal, their vigor being proportionate to the general health of the body. If the leucocytes are vigorous, they prevent the germination of the spores which they had ingested; but they maintain this power at a maximum only so long as they are healthy. If an animal has been submitted to cold, or has been narcotized, it loses its immunity from infectious maladies.

Such are the facts, and it seems reasonable to explain them, as does Menchikoff, on the theory that the leucocytes are the defensive agencies against infectious disease with which animal bodies have been endowed by nature. The necessities of the struggle for existence have evolved in living organisms the capacity of self-protection by dispatching armies of leucocytes to the spots attacked by noxious microbes. The struggle, as we have said, may end in either the rout of the leucocytes, in which case disease ensues, or in the repulse of the microbes, which is followed by recovery. Or, again, the outcome may be a drawn battle, which represents the state of things in various chronic diseases.

Disposal of Refuse in American Cities.—The disposal of the refuse in cities, while it has been a problem in the sanitation of our larger towns, is yet to be solved. There is probably not a city of any size in the United States where the disposal of waste is satisfactory or conducted in such a manner as to meet the demands of cleanliness and hygiene. If there is a perfect plan adopted, there are to be found defects in its execution which render ineffective the methods used. The report of Mr. Walter V. Hayt, general sanitary officer of the Chicago Board of Health, recently published, gives a summary of different cities as to their methods of "collection and disposal of garbage and refuse." From this we learn that in New York the garbage is collected by the city teams, loaded upon flat boats, removed to sea and dumped. The garbage is removed from Philadelphia by small contractors in a very unsatisfactory manner; some feed to hogs, others sell to farmers, and at times it is buried or accumulated on the ground awaiting slow decomposition. Cremation is recommended. In Brooklyn refuse is moved to the sea. Collections are made daily from hotels, from dwellings twice a week in winter and three times a week in summer. St. Louis collects its garbage and discharges it at certain dumps. It is not satisfactory, and cremation is also here recommended.

In all the cities cited, the methods of disposal are not satisfactory in one. The method adopted or the service rendered is at fault. The lack of funds is responsible in some instances for the deficient work in the disposal of garbage. In the first place there is too much garbage produced, and in the next, that which must necessarily be produced is not properly cared for, and the problem, how best to dispose of the refuse of cities, is still unsolved. The fact is, some garbage must be produced, and we do not believe that any method which does not look to the destruction of this garbage will be a success.—*Sanitary News*.

MISCELLANEOUS.

HYPNOTISM.—Dr. James Cumming, in the *Lancet*, speaks of hypnotism as follows:

Hypnotism and its allied states have long exercised a powerful fascination on a large proportion of the intelligent public, and been looked on with much curiosity, but always with a little suspicion by physicians. Although not new, these singular and striking manifestations have of late been more carefully studied, the methods of producing them have been more clearly ascertained, and one is glad to notice that, instead of being relegated to non-professional men, they have engaged the attention of some of the physicians most competent to conduct such inquiries and most capable of estimating their results with precision and judgment. Whatever verdict may ultimately be passed on hypnotism, there can be no reasonable doubt that certain facts have been elicited which shows that in the hypnotic condition profound and extensive modifications occur in the sensory and motor functions of the brain.

Now, admitting that much has been urged against hypnotism; granting that it is likely to attract the attention of the men who have a liking for the marvelous; that it can be practiced by men possessed of no scientific training, and incompetent to deal with the most refined activities of the nervous system, and that it thus lends itself to charlatanism and imposture; granting that it may be attended with danger of a formidable kind, and also that its field of therapeutic usefulness is likely to be at best a very restricted one, and its effects probably transitory; still it is a subject eminently deserving the careful and profound scientific investigation, conducted under the most rigid precautions, so as to exclude intentional or involuntary deception. We do not need to be much concerned about whether, as has been stated, we have in hypnotism a condition akin to natural sleep, or whether it is in reality a pathological state related to hysteria. What is now wanted is a clear account of the phenomena which are capable of being produced under its influence. If, as numerous statements aver, hypnotic suggestion can be shown to in any degree affect the processes of nutrition and the reaction to irritants, then some points of the very highest interest as regards the influence of psychical or physical processes will have been established. Most of us have been inclined to read with a considerable degree of skepticism the accounts of instances in which obvious physical changes have been stated to have resulted from nervous influence, especially when these changes have occurred in a rapid manner. Should the statements on this subject which have been made so positively, and on the faith of apparently cautious and trustworthy observers, prove to be authentic, we shall certainly be compelled to reconsider our position with reference to them.

The opinion is generally entertained that the diseases of the nervous system are now more widely diffused and more numerous than formerly. It is somewhat difficult to obtain accurate statistics on this question and not altogether easy to ascertain their precise value, but some facts seem open to no serious question. In Ireland the proportion of the insane to the population has steadily increased. Even allowing for the fact that emigration takes away in the main the healthy and strong, and that consequently this represents the proportion of insane to a much larger population than now exists in the country, still it indicates a very notable increase. The reports of the Register-General for England show an almost uninterrupted increase in the mortality from nervous diseases. Some of this is no doubt explicable in other ways, but on the whole the evidence of statistics coincides with the general opinion among physicians that there is an augmentation. Whether this depends on the increase of causes tending to overwork and weary and exhaust the brain and nervous system we need not at present stop to discuss. Now, even those of us who have no special connection with the treatment of the insane find ourselves frequently brought into contact with questions regarding insanity. Apart from the mere granting of certificates, which, however, is attended with much anxiety and with heavy legal responsibility, there are the numerous minor forms of aberration in which it hardly becomes a practical question whether they necessitate restraint or not, and there are also the many instances in which general affections produce mental phenomena. Then we have the numerous cases of temporary insanity which are never known beyond the families of the sufferers and the medical men to whom their care is intrusted, as well as the incipient stages of mental disease in which skillful management is of the utmost importance.

Now the study of medical psychology alone is to my mind a very incomplete and inadequate preparation for comprehending the multiform disturbances of mental function, and is even more inadequate in respect of either diagnosis or therapeutics, and in regard to the expectation of adding to our knowledge of cerebral diseases as regards either localization or character. I have long been of opinion that some knowledge of psychology proper—that is, of the science of the phenomena of mind in its normal conditions—is absolutely necessary. Without an acquaintance with the problems and methods of psychological inquiry it is impossible to observe and to describe adequately the phenomena of morbid mental states. In the investigation also of those conditions in which the disturbance of a single function is what is most manifest and striking, it is clear that a knowledge of the limits of differentiation of function must be of capital importance. It will be of value also to become familiar with the terms used in psychology, in itself a study of no inconsiderable difficulty and extent. In dealing with such questions as amnesia, aphasia, delusions and hallucinations, and other disturbances of consciousness, we are not only in the sphere of our legitimate activity and of our daily work, but we are touching, not indirectly, on some of the most interesting problems of mind. In examining these questions we get into one of the main currents of modern thought, and have suggested to us some problems which have engaged the attention of many of the acutest intellects of ancient and modern times. Some psychologists refuse to accept any help from physiology, and fortify themselves in the citadel of introspection, declining all external aid. It is said by them that the comprehension of physical processes throws no light on psychical processes, and that these are absolutely heterogeneous.

Now, in assisting in the solution of these grave problems I think our function as medical men is in the main a limited although a highly important one. Our obvious duty is to collect such a body of facts as will afford a sure foundation for future generalizations. Besides the states of marked and more or less well defined disease which enter of right into our nosological classifications, we have a wide field in examining into the influence of habit and heredity, the cerebral peculiarities which more or less transformed descend from generation to generation, constituting an "innate preparedness" for the development of particular morbid phenomena, the relations between vice and disease; and the question of when criminality implies merely pathological conditions. Physicians cannot accept the position of mere *curiosi naturæ;* in presence of serious disease they must act with the best means they possess.

THE TREATMENT OF HYSTERIA.—In the days of Sydenham, hysteria, or "the vapors," was the most frequent of all chronic diseases, according to that eminent observer. At the present day it is perhaps less common relatively among women, but is more common, or at least oftener observed, among men. The conception of the nature of hysteria has undergone much change since the olden times, when it was thought to be a disorder primarily of the womb. For many years it was taught that hysteria was a reflex trouble; then that it was a convulsive neurosis of a general or constitutional nature. These ideas have of late been much modified, and it is now quite generally agreed that hysteria is a disease of the mind, or a psychosis. The psychology of the condition has been well studied by Janet, Möbius, and others. They note as characteristic phenomena a limitation of the field of consciousness and a disorder of the association processes, as the result of which impressions received are not properly modified and adjusted to previously acquired knowledge. Hence, they become dominant and intense, and disturb the ordinary mental equilibrium.

The conception of hysteria as a psychosis has an important therapeutical bearing. It cuts away the ground from those who would treat the disease as originating in the uterus, the stomach, the blood or the eyes. Dr. Paul Blocq, of La Saltpêtrière, divides the treatment into the psychical, external, internal, and treatment of special conditions. The psychical treatment is naturally the most important. It consists essentially in isolation. This measure we are told is approved and taught by Charcot. Curiously enough no credit is given to Weir Mitchell and other American physicians, who originated and developed it long before Charcot and his pupils took it up. The other form of psychical treatment is hypnotism, to which Blocq wisely gives a cautious approval. It has value only in certain cases. The external measures advised are hydrotherapy, electricity and massage. The hydrotherapy is given daily in the form of a jet, or by the wet sheet and sponge bath. Franklinism is thought to be the most efficacious form of electricity administered in the form of a bath. In some special types, however, Faradism does better. Massage is applied in all its various methods of effleurage, pétrissage, tapottement, etc. In general, pétrissage is useful in the convulsive forms, effleurage in those with contractures.

Little reliance is placed on medication for the psychosis itself. Naturally anæmia, dyspepsia, etc., may call for proper remedies. The bromides are of little value in hysteria, according to the French school and Charcot even utilizes the drug in diagnosticating hysteria from epilepsy. American physicians do not find it so useless, partly, perhaps, because American hysteria is not of so purely a mental type. Bromide of camphor, valerian and zinc are advised by Blocq in cases in which there is excessive nervousness and agitation. For the attacks, ether and bromide of ethyl may be used.

Dr. Blocq disturbs one very common belief among physicians, viz.: that marriage is a good remedial measure for hysteria. It is, he says quite generally agreed that marriage does more harm than good to hysterical women, and it is not to be advised unless there be special reasons for it.—*New York Medical Record.*

"COELIOTOMY" VERSUS "LAPAROTOMY" AS A SURGICAL TERM. (By ROBERT P. HARRIS, A.M., M.D., Philadelphia.)—When you perform an abdominal section and report the case, under what scientific term do you describe the operation? You probably call it a "Laparotomy," because hundreds of operators are in the habit of using the same word, or its synonym, in a dozen countries and languages.

Where did this term originate? You say it has a Greek derivation (the language of Greece having been the tongue of the first anatomists) and comes from two words, *lapara*, and *tomæ*, to cut. Now what did the Greeks call the *lapara?* It was certainly never the abdomen.

Did you ever look carefully into an ancient Greek anatomy to find out what the abdomen was really called in their language? The word *belly* appears ten times in the English version of the New Testament; did you ever note that the original Greek has the word *koilia* and never *lapara*, in these ten places?

Rufus, of Ephesus, a distinguished physician and writer, born A.D. 112, wrote a paper entitled "Names of the Parts of the Human Body," in which he has this significant sentence: "The *omphalos* (navel) is the hollow which occupies the middle of the *koilia*, where we cut the veins that nourish the fœtus; the middle part of the hollow is the *akromphalon*" (top of the navel).

"Lapara" is a very old Greek term and was applied in the time of Hippocrates to the parts between the short ribs and the iliac bone (the flank), and scores of old lexicographers have thus defined it. The operation for lumbar hernia, or laparocele, was a true laparotomy; and so, also, is that of lumbar or laparo-colotomy. The term *lapara* originally meant a hollow, and was for this reason applied by the early anatomists to *the hollow of the waist.* It was never used to designate a convexity.

The misapplication of the term "laparotomy" commenced in the year 1811 in the medical thesis of a Wittenberg student of the name of Fiedler, who wrote in Latin under the title "De Laporatomia." He had witnessed a true laparotomy performed on October 17, 1810, upon a man of fifty with a diseased colon, as he lay on his right side. Fiedler wrote again in 1817 and took it upon himself to coin such distortions as "laparo-gastrotomia," "laparo-raphia," and "laparo-hysterotomia"—his desire seeming to be to supplant the term "*gaster*," which really meant the belly, by the word "lapara," which a careful investigation would have taught him was not its Greek synonym. The mystery is how an error of this kind ever made the progress that it has in leading the medical world astray.

"*Koilia*" being the Greek word for abdomen, the natural synonym of gastrotomy in its old meaning is "coeliotomy," pronounced soft (se-le-otomy). This is not a new coinage except as to its terminal, for we long had *coelio-paracentesis* for tapping the abdomen. The term coeliotomy has been adopted by Prof. Sänger, of Leipzig; by Dr. J. Greig Smith, in his *Abdominal Surgery;* by Profs. Keene and White, in their

Text-Book of Surgery, and by a number of well-known medical writers. This adoption gives us the compound terms *coelio-hysterotomy* (Cæsarean section), *coelio-hysterectomy* (exsection of uterus through the abdomen), *puerperal ceolio-hysterectomy* (Porro-Cæsarean operation), *coelio-nephrectomy* (abdominal exsection of the kidney), etc.

What characterizes the present position of our condemned term is its wonderful tenacity of hold in the nomenclature of gynecological writers who have admitted the error of its application in abdominal surgery. Two years ago I published a classical pamphlet on the subject and sent it to prominent writers in thirty different countries. I also sent a copy to every Fellow of one of our leading national medical societies just before it met in annual session in 1890, and their letters attested its effect upon their sense of reason. It convinced them that *lapara* was not the abdomen and that *koilia* was; but it did not break up the habit of use, as shown by the fact that four papers entitied "laparotomy" appeared in their *Transactions* for 1891, and the term was time and again made use of throughout the volume, but no one said "coeliotomy" as much as once. The old rut is so easy to run in, and the laparotomy wheel will get in. It took eighty years to propagate the error, and it will take time to correct it.

HEROES AND MARTYRS OF SCIENCE.—Professor Herbert McLeod might have added to his address at Edinburgh that bacteriology is not only a singularly difficult, financially unremunerative and costly research, but a source of peril. We mentioned recently four deaths and several severe forms of illness produced incidentally in the enthusiastic and self-sacrificing study of experimental medicine by British medical men and students. From several communications which we have since received, it is evident that the danger is one which, if on the one hand it should not be overrated, is on the other worthy of more serious attention than it has yet received. To this list of quite recent cases of contracted disease which we then gave we regret to have to add that of M. Vignal, the distinguished bacteriological experimenter on the staff of the Collége de France, whose admirable work has made him well known and much esteemed in this country, with which he is connected by descent and marriage. M. Vignal, in the pursuit of his studies of the varieties and means of prevention of tuberculosis, has unfortunately become infected, and his health is suffering considerably from his devotion to this all-important research. Happily there is reason to hope that it may be reëstablished; but for this much patience will be required, and in the mean time his researches have been seriously interrupted, and a humanitarian pursuit which can ill spare laborers so devoted, able and disinterested has been deprived of his services.—*British Medical Journal.*

HEADACHE IN CHILDHOOD.—The *Archives of Gynecology* quotes a foreign authority as saying that seven groups of headache may be classified:

1. Headache from rapid growth. It is usually frontal, is increased by exercise and co-exists with pain in the joints, periostoses, and hypertrophy of the heart. Treatment: Muscular repose, tonics, liberal diet, phosphate of lime.

2. Headache from intellectual activity. It occurs in intelligent and excitable children who study too much, or in backward children who acquire their lessons with difficulty. Treatment: For the first class of cases, cessation of intellectual work, physical exercise, but not so severe as to produce fatigue; lukewarm baths. In the second class of cases the work may be continued in moderation, plenty of exercise being enjoined.

3. Headache from digestive troubles. It occurs in children who eat too much or too fast, and occurs in one to three hours after eating. Treatment: Properly regulated hygiene and diet; by bitter tonics before eating; warm drinks after eating. Constipation should be overcome.

4. Headache of nervous origin. It occurs in children who are excited by their manner of living. It is premonitory of future neuropathies, epilepsy and hysteria. Treatment: Baths, walking, massage, aconite, valerian, belladonna, and bromides for the epileptics. They should avoid taking cold.

5. Headache in children of gouty or rheumatic diathesis. It is sometimes accompanied by intense congestive phenomena, which simulate meningitis. There are manifestations of hereditary antecedents; there are neuralgias, arthralgias, myalgias; the urine contains phosphates, oxalates and urates. Treatment: Moderate diet, exercise in the open air, vapor baths with friction, laxatives, alkalines, salicylate of soda in doses of from four to five grains, and tincture of colchicum in ten to fifteen drop doses daily.

6. Headache from anæmia and poisoning. In the first case it is due to bad air and hygiene, in the second to malaria, carbonic oxide, to excessive medication, to uræmia. Treatment should vary with the cause.

7. Headache from injury to the sensory organs. There may be chronic conjunctivitis, or keratitis, or iritis, which should be treated locally, and also by the internal use of sulphate of quinine in large doses. Troubles of refraction, hypermetropia and astigmatism must be treated with suitable glasses.

THE VALUE OF ANÆSTHETICS IN OBSTETRICS.—Dr. A. DUHRSSEN (*Berliner Klinische Wochenschrift*, No. 15, 1892) calls attention to the many cases in which anæsthesia is of service in obstetrics. He fears that while specialists are perfectly accustomed to its use, too many physicians make little or no use of it.

Anæsthesia is very valuable for the patient, since it spares her pain. If she is suffering very much and tossing about, it may be impossible for the physician to make a complete diagnosis without producing anæsthesia. He then can ascertain if the infantile pulse is normal. The mother's pulse, while narcosis lasts, is also important; if it remains above 100, it is a sign something is wrong.

The internal examinations are vastly easier to make, and thus the physician is promptly able to make choice of the most suitable obstetrical operation. If it is a sensitive, first confinement, it may, on account of the tense perineum, be difficult to reach high enough into the pelvis to ascertain how far the head has advanced into the pelvis. If, in such a case, there also exists a considerable swelling of the head, which may reach clear down to the vulva, the physician is easily led to believe that the head is already well down in the pelvis, and that an extraction with forceps will be easily possible. In fact, the head may still be above the entrance to the pelvis, and the use of the forceps would be difficult or impossible; in such a case, turning might be possible later. When an anæsthetic is used, such errors are prevented, for the pelvis can then be thoroughly explored.

It is also very important to produce anæsthesia, in order to make correct diagnosis of abnormal presentations; especially is this the case when there is a posterior parietal presentation, or a deep transverse presentation; and it is valuable in all cases where the part presented is still high and we cannot make an exact diagnosis with one or two fingers, but need to introduce the whole hand.

The same is also true of the cases where some malformation, abnormally large head, etc., are met; also where no part is presented, or the presenting part is still high above the pelvis. In the second place, anæsthesia is of valuable assistance in obstetrics in all those cases where turning needs to be assisted by the outer hand. Among these cases belong turning, and especially the combined turning of the child, the loosening of the placenta, and the presence of tumors; and also when the os uteri is insufficiently dilated.

In the third place, anæsthesia has a very great value as a direct therapeutic agent, and that, too, used very superficially, in hastening the delivery, as in cases where the pains, although very great, do not accomplish much, and where the uterus does not relax properly in the pauses.

The production of anæsthesia is contraindicated in cases of sepsis, or should at most be very cautiously undertaken, for so-called chloroform death has been seen in cases of sepsis. Chloroform death may follow an abortion at the very first breath of chloroform.

Deep and long-continued anæsthesia is contraindicated in cases of eclampsia. The narcosis is very valuable in eclampsia, but only in order to permit an obstetrical operation; the earlier this is performed the better, as eclampsia affects the heart-muscle.

Narcosis is contraindicated in cases of tetanus uteri, and where there is weakness of the heart.

The Treatment of Burns.—Von Bardeleben (*Deutsche Medicinische Wochenschrift*, No. 23) states that no specific for the relief of pain of burns has as yet been discovered. The author's present method of treatment is as follows:

After carefully cleaning the burned area, it is irrigated either with a three per cent. carbolic solution or a thirty per cent. salicylic acid solution. Sublimate lotions are avoided because of the great pain they produce.

After all the blebs are opened, the entire surface is covered with powdered bismuth; over this cotton is applied. This absorbs any discharge, and fully protects the burned surface from the air. The cotton may be sprinkled with a powder composed of equal parts of bismuth and starch.

This dressing may be allowed to remain from one to three weeks, according to the case. In cases of burns about the face it is only necessary to cover the burned parts with the powder, the bandage being omitted because of the discomfort it occasions.

Under this treatment the author has seen children recover where two-thirds of the body were involved.

Von Bardeleben thinks the bismuth probably exerts some influence in preventing intestinal complications, as in one hundred cases treated in this manner only two had blood in their stools. In using the bismuth, there is no danger of intoxication from absorption, even in cases where it is extensively applied. By the antiseptic treatment secretion is greatly diminished.—*Therap. Gazette.*

Treatment of Apparent Deaths from Drowning.—Laborde (*Rev. Gén. de Méd.*, July 20, 1892) reports that in two cases of submersion in which the patients seemed to be dead, he used the following procedure, which he is in the habit of employing on the animals in his laboratory. It consists in seizing the tongue, pulling it out of the mouth, and making rhythmical traction on it. This is followed in the first place by reflex hiccough, then by spontaneous contractions of the diaphragm, and finally by reëstablishment of circulation and respiration. As an adjuvant to this procedure the application to the epigastrium of cloths soaked in very hot water, even at the risk of burning the skin, is found useful.—*British Medical Journal.*

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MEDICAL NEWS AND NOTES.

Treatment of Pruritus.—It is a fact well worth remembering that a full mercurial purge will sometimes relieve pruritus in a remarkable way. Dr. Lange reports good results from the use of alkalies. In four cases of rebellious pruritus he found that the urine was loaded with uric acid and urates. He prescribed alkalies, such as bi-carbonate of soda, carbonate of lithium, alkaline waters, etc., with excellent results and finally complete cures.

The Retirement of Sir Joseph Lister.—The eminent originator of modern antiseptic surgery, having attained the age of sixty-five, has been retired from his post as lecturer on clinical surgery at Kings College Hospital, London. The rule requiring his retirement on account of age has been commented on quite freely as an unnecessarily harsh measure, for the distinguished surgeon is no less capable and active today than when he was invited down to London. The hospital does not altogether lose his services, for by a special act of grace Lister will continue for a year longer to occupy his position on the attending staff.—*N. Y. Med. Jour.*

The American Electro-Therapeutic Association.—A very full programme is announced for the coming meeting of the American Electro-Therapeutic Association, which is to be held in New York at the Academy of Medicine 17 West 43d Street, October 4th, 5th and 6th.

There will be two interesting discussions one upon "The Relative Fœticidal Value of the different Currents and their Application to Ectopic Gestation," to be discussed by many prominent Gynecologists and Electricians, and another upon "Cataphoresis and its Practical Application as a Therapeutic Measure."

Papers are announced by Drs. Geo. J. Engleman, Wellington Adams and Geo. F. Hulbert of St. Louis; Wm. F. Hutchinson, of Providence, R. I.; Franklin H. Martin, of Chicago, Ill.; A. Lapthorn Smith, of Montreal, Canada; R. J. Nunn, of Savannah, Ga.; Thomas W. Poole, of Lindsay, Ontario; C. Eugene Riggs, of St. Paul; W. J. Herdman, of Ann Arbor, Mich.; D. S. Campbell, of Detroit, Mich.; G. Betton

Massey, of Philadelphia; Henry D. Fry, of Washington, D. C.; H. E. Hayd, of Buffalo, N. Y.; J. H. Kellog, of Battle Creek, Mich.; C. G. Cannaday, of Roanoke, Va.; Ernest Wende, of Buffalo, N. Y., and Wm. J. Morton, Augustin H. Goelet, A. D. Rockwell, Landon Carter Gray, Robert Newman, Ephraim Cutter, Frederick Peterson, G. M. Hammond, F. Van Raitz, of New York, and many others. Dr. J. Mount Bleyer will give an instructive lecture with demonstrations entitled "The Phonograph and Microphonograph: the Principles underlying them and their Uses in the Sciences."

In connection with the meeting, there will be an exhibition of Modern Medical Electrical Apparatus, all the prominent manufacturers being represented.

The social part of the programme includes many pleasant surprises.

The Mattei Treatment.—The following from the London letter to the New York *Medical Record* is news that was to have been expected. Fortunately a more rational course was pursued in dealing with the subject than is usual in such matters, a committee of medical men having been appointed to give the remedies a fair and scientific test: The Mattei bubble has at last burst. The Mattei treatment was boomed into notoriety some months ago by Lady Paget, who wrote an article in its favor in a review, which was followed by another by Mr. Stead in his organ, the *Review of Reviews*. Mr. Stead took up the subject with his usual enthusiasm, and proposed that the value of the Mattei treatment should be properly examined by the exhibition of the Mattei remedies, to test cases of cancer under medical supervision. A medical committee was accordingly formed, and the result is what might have been expected. The patients selected as test cases have gradually got worse, no case being cured or even markedly benefited. The bubble has finally burst by the withdrawal of the Matteists from the experiment.

Appendicitis and its Treatment.—Prof. A. Iversen, of Copenhagen, relates two successful cases where the patients exhibited the well-known symptoms of perforation of the vermiform process, where the removal of the appendix vermiformis was performed. The appendix had a thickened and inflamed wall, was fixed to the environs by peritoneal adhesions, and contained muco-purulent fluid. The author recommends the removal of the vermiform process (1) when symptoms of inflammation of this organ recur several times, (2) when there are signs of distention of it from pus, and (3) in cases of intra-peritoneal abscess.—*Satellite.*

CHOLERA INFANTUM.—An interesting report in *La Normandié Médicale*, Rouen, June 1, by Dr. Hue, speaks of some observation made during a severe epidemic of cholera infantum in a ward containing children of not more than ten days old. The children taken sick were all fed on cow's milk, not a single nursing child being attacked.

Scrupulous care was taken with the vessels, and the milk was procured from cows that were healthy and well cared for. The disease was very fatal, death occurring in from twenty-four to forty-eight hours. Anti-fermentative treatments of all kinds were tried, together with boiling the milk. Nothing was of avail until the ward was antiseptically cleaned and the milk sterilized.—*Annals of Gynæ. and Paed.*

THE Mississippi Valley Medical Association will hold its Eighteenth Annual Session at Cincinnati, Wednesday, Thursday and Friday, October 12, 13 and 14, 1892. The programme is a valuable one, containing many of the most prominent names which the profession of our country affords. It covers every department in medicine. The attendance will be unusually large, as Cincinnati is the centre of population of the United States. Not only the scientific but also the social part of the meeting will be of the highest order. The interest of the convention will be augmented by the meeting of the gentlemen interested in the Pan-American Medical Congress; also other bodies of medical men. Dr. Benjamin Ward Richardson has written his earnest desire to be present. The Association will be just in time and just in line for many of the gentlemen en route for the American Public Health Association in the city of Mexico. Among the many prominent gentlemen who are expected to read are the following: Dr. Hunter McGuire, Richmond, Va., President of the American Medical Association: The Address on Surgery. Dr. Hobart Amory Hare, professor of Materia Medica Jefferson Medical College, Philadelphia: The Address on Medicine. Papers are expected by Drs. Reed, Ricketts, Hall, Dowling, Ayres, Connor, Ramsohoff, Dandridge, Comegys, Whittaker, Zenner, Zinke, Cincinnati; Cook, Woodburn, Thompson, Indianapolis; Owen, Walker, Evansville; Lydston, Moyer, Belfield, Chicago; Matthews, Wathen, Larrabee, Reynolds, Louisville; Savage, Nashville; McGahan, Chattanooga; Dixon, Henderson; Hughes, Love, Loeb, Dalton, Boerck, Bond, Hulbert, McIntyre, St. Louis; Lamphear, Kansas City; Smith, Montreal; Sutton, Murdock, Daly, Pittsburgh; Early, Ridgeway, Potter, Buffalo; Bader, Cleveland, Thorn, Toledo; Walker, Detroit; Baldwin, Columbus; Bond, Richmond. C. A. L. Reed, M.D., President, Cincinnati. E. S. McKee, M.D., Secretary, Cincinnati.

Mrs. Margaretta Rivera, grandmother of Governor Galan, of Coahuila, died at Monterey, Mexico, on Friday, at the age of 132 years. She was born in Spain, and came to Mexico over a century ago. She recently received from the Archbishop of Madrid a copy of the Cathedral record of her birth.

TREATMENT OF FISSURE OF THE NIPPLE.—Dr. Barton Hirst, of Philadelphia, in the *University Medical Magazine* for March, advises the use of an application of equal weights of castor oil and subnitrate of bismuth in the treatment of fissure of the nipple. The nipple and adjacent parts should be thoroughly washed and disinfected before applying the ointment. One of the advantages of this application is that it need not be removed if it becomes expedient for the child to nurse at that breast. The ointment makes a smooth and flexible coating, which not only serves as an efficient protective, but tends to reduce the pain and reflex irritation. For the mammary engorgement and pain that so frequently occur when the nipple becomes fissured, he advises the employment of lead water with laudanum, in addition to the ordinary sling-compress. The entire breast should be covered with a cloth wet with the lotion, and the applications should be repeated at short intervals. This line of treatment ordinarily prevents the formation of abscess. It is best to allow the unaffected breast alone to be nursed, and the milk from the affected side can be drawn off with the breast-pump. If it be imperative that the infant shall nurse at the fissured nipple, a glass shield with a rubber tip may be used.—*Medical Age.*

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.—By order of the Council, the annual meeting of the Association has been postponed from the 8th, 9th and 10th until the 15th, 16th and 17th of November. It was thought wise to change the time of the meeting from the fact that the 8th of November is the date of the Presidential election. Everything points to a very successful session.

THAT much advertised nostrum Dr. Green's Nervura Nerve Tonic is said to be made of—tinct. damiana, tinct. calisaya, tinct. coca, aa 5 oz.

THE new United States Pharmacopœia will have all formulas expressed in metric terms.

A PARISIAN electrician has succeeded in forcing violets by the aid of his battery, and recently sent a bunch of these fledglings, only four hours old, to ex-Empress Eugénie.

The highest legal tribunal in Germany has decided that legal human life does not begin in the fetus until labor has set in, and that its destruction before full term is not murder. This is progressive retrogression.

It is said that a Vienna ophthalmologist has introduced a new operation, over which some of the European eye-specialists are running wild. The operation consists in the removal of the crystalline lens for the cure of myopia. Valude reports one operation of this nature performed upon a child only six years old.

Bicycle-riding is advocated as a remedy for persistent sciatica. It has been successful in cases of two or three years' standing.

Without exception, the first symptom of pregnancy is an increased frequency of the desire to micturate.

There are no medical practice laws in Kansas, Utah, Connecticut, Maryland, Ohio, Maine, Rhode Island and Massachusetts.

Paper Money as a Carrier of Infection.—The possibility of infection being conveyed to a large number of persons by means of paper money has often been suggested, and an examination of the notes of the bank of Spain current in Cuba which has recently been published by Drs. Acosta and Rossi in the *Crónica Médico-Quirurgico de la Habana* shows that this form of currency is indeed liable to contain septic germs. The notes chosen for their experiments were some that had been in use for a good while and were such as represented values of a few pence only. It was estimated that two notes weighing altogether about fifteen grains contained more than 19,000 germs of various kinds. Cultures were made in broth, gelatine and agar, and these were injected into the peritoneal cavity of rats and guinea-pigs, most of which died within twenty-four hours, the post-mortem examination showing signs of peritonitis and congestion of the liver and kidneys. The blood of the heart and peritoneum was made use of to inoculate solid media, in which colonies developed so rapidly that it was impossible to determine their precise nature, many different forms being intermingled.—*Lancet.*

Dr. W. Thornton Parker has accepted an invitation of the Faculty of the College of Physicians and Surgeons, Chicago, to deliver the course of lectures on medical jurisprudence during the approaching sessson, 1892–3.

"I WAS recently in Japan," says an American, "and I met there several American and German doctors who were getting rich by straightening the slant in the Japanese eye to make it look like the beloved Caucasian's optic. The Japanese, you know, show the traces of their Mongolian origin more plainly in the shape of their eyelids than in the color of their skin, and those who can afford it are ridding themselves of this unmistakable evidence of their despised ancestry by submitting to a simple and comparatively painless operation, which consists in the surgeon slitting the outer rim of the eyelids in a straight line for the barest infinitesimal part an inch. The wound is then covered with a thin piece of chemically prepared sticking plaster, the faithful subject of the Mikado goes on about his business as if nothing had happened, and in a few days the wound is healed and he looks on his envious fellows through lids as straight as the American's."

THE Court of Appeals of Kentucky has recently decided that syphilis, pleaded in answer to an action to recover damages for breach of promise of marriage, is a complete defense, following the decision of the Supreme Court of the State of North Carolina, in which the same defense was interposed and sustained in a similar action.

TREATMENT OF PUERPERAL PERITONITIS.—Dr. A. L. Smith (*Amer. Jour. of Obstet.*) says: The temperature should be taken every day after every confinement, and on the slighest rise vaginal douches of permanganate solution should be commenced.

If the temperature continues to rise, the douches should be made intrauterine.

If there is no improvement at the end of twenty-four hours, scrape out the uterus with the finger or with the curette, applying strong tincture of iodine, wash out the uterus, and drain with iodoform gauze.

If the case proceeds from bad to worse, and peritonitis sets in, perform an exploratory incision, and, if no other evident cause can be found, remove the uterus.—*Memphis Med. Monthly.*

DERMATOL AND IODOFORM.—Dr. Glaser holds that dermatol is not in any sense a substitute for iodoform, as it diminishes secretion while the latter excites it. He thinks dermatol may be profitably employed in the case of aseptic (operative) wounds, infected wounds being best dressed with iodoform.—*Amer. Drug.*

THE ODOR OF IODOFORM may be very successfully masked by the essential oil of coriander.

Recovery from Twenty Grains of Strychnine.—Wallace and McRae (*British Medical Journal*, 1647, p. 179) have reported the case of a man, sixty-five years old, who was seen some seven or ten minutes after the ingestion of twenty grains of strychnine sulphate. Apomorphine, gr. $\frac{1}{5}$, was given hypodermatically ; six tumblers of hot water, with three tablespoonfuls of mustard and three tablespoonfuls of salt, were administered by the mouth. Three ounces of tannic acid were likewise given, and the stomach was washed out by means of the stomach-pump. Finally a large dose of potassium bromide and thirty grains of chloral were given and strict quiet and absence of light and movement enjoined. There were twitchings and jerkings of the muscles of the limbs and tetanic spasms of the muscles of the lower jaw, with violent contractions of the œsophagus. Emesis was prompt and energetic, and the man recovered.

Aspiration of the abdomen, which, in general, has been considered an operation free from marked danger, is not always so, as shown by a case reported by Dr. Frank D. Sanger (*Medical Standard*), where aspiration of bladder in a man of 75 was followed in sixty-two hours by death due to peritonitis. This is supposed to be the first fatal result following the use of the needle.

Many cases are, however, reported in the operation of puncture. In 1877, Deneffe and Van Watke published a collection of 152 cases of suprapubic puncture with six deaths, and eighty-seven of rectal puncture with eleven deaths.

Dr. W. P. Chunn advises sticking close to the bone, thus avoiding the peritoneum.

An Excellent Emmenagogue is given in the *Medical News*, Cincinnati, as follows:

℞. Hydrargyri bichloridi.
Iodii arsenitis ....aa gr. iii
Strychninæ sulphatis....gr. ss($\frac{1}{2}$)
Potassii carbonatis.
Ferri sulphatis.......aa gr. xlv
M.—In pilulæ lx. divid.
Sig.—One pill after each meal.

Kerauno-Neuroses.—Frankl-Hochwart (*Zeitschr. f. klin Medicin.* describes as kerauno-neurosis a condition that develops in persons who have been struck by lightning. The symptoms are those characteristic of the traumatic neuroses, and include palsies, tremor, derangement of common and of special sensation, limitation of the visual fields, ataxia, and exaggerated reflexes.

Iodoform Sponges.—Immerse the sponges in water containing 5 per cent. of hydrochloric acid, and after allowing them to stand 5 days, wash them thoroughly in fresh water, dry, and then place in a 7½ per cent. ethereal solution of iodoform, and finally allow the ether to evaporate and preserve the sponges in glass stopper bottles. Haug states this to be an excellent method, particularly applicable to small soft sponges, which should be very carefully cleansed prior to the operation.

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OBITUARY.

Dr. John J. Reese.—This eminent toxicologist died at Atlantic City, on Sept. 4th.

Last October Dr. Reese, after 25 years' service, resigned the chair of Medical Jurisprudence and Toxicology at the University of Pennsylvania, and was elected Professor Emeritus. He has since been living at Lansdowne.

Professor Reese was born in Philadelphia, June 16, 1818. In 1836 he graduated as Bachelor of Arts in the University of Pennsylvania, receiving his A.M. and M.D. degrees in 1839.

He at once began a career of success, rising rapidly in his profession and acquiring a national reputation by his revelations in toxicology. He was soon recognized and honored by membership in many sientific and medical societies. In 1841 he was elected to the Philadelphia County Society, of which he was made treasurer in 1859.

The American Medical Association elected him a member in 1852, and in 1855 he became a member of the Medical Jurisprudence Society of Philadelphia. He was president of the last society in 1886 and 1887. He was at the same time made a member of the New York Medical Society.

Professor Reese held many important positions in that city, being for a number of years visiting physician to St. Joseph's Hospital and Girard College. He was also medical supervisor of the Philadelphia Orphan Asylum from 1858 to the time of his death.

He was Professor of Medical Chemistry in the old Pennsylvania College in that city from 1854 to 1859.

In 1842 he was made a member of the College of Physicians, and was elected Professor of Toxicology and Medical Jurisprudence at the University of Pennsylvania in 1865. He was also Analytical Demonstrator to ex-Coroner Powers, during which time he was called away to give expert testimony in many famous cases.

He was assistant surgeon to the United States Army from 1861 to 1865, and in this capacity saw much hard and interesting service on the battle-fields of the civil war.

He was for many years associated with the firm of Booth, Reese & Camac, analytical chemists of this city, with an international reputation.

Professor Reese made important contributions to medical literature, his published works, including Analysis of Physiology, American Medical Formulary, Manual of Toxicology and a Text Book of Medical Jurisprudence and Toxicology. He also edited the seventh American edition of Taylor's Medical Jurisprudence.

In toxicology and medical jurisprudence, a leading physician said he stood at the head of the medical profession in this country.

About fifteen years ago he made a celebrated stroke in toxicology in the then famous trial of Mrs. Wharton, of Philadelphia. Mrs. Wharton was accused of poisoning General Ketchum, of Baltimore.

Dr. Reese was engaged by Mrs. Wharton's counsel, and his testimony in the case was so strong that Mrs. Wharton was acquitted.

Professor Reese married the daughter of Professor Gibson, of the University of Pennsylvania. His wife and children survive him.

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BOOK REVIEWS.

"The Diseases of the Stomach." By Dr. C. A. EWALD, Extraordinary Professor of Medicine at the University of Berlin; Director of the Augusta Hospital, etc. Authorized Translation from the Second German Edition, with Special Additions by the Author. By Morris Manges, A.M., M.D., Attending Physician to Outdoor Department, Mount Sinai Hospital, New York City. With Thirty Illustrations. New York: D. Appleton & Co., 1892.

This is the best work of the kind which has yet come under our observation. Dr. Ewald's well-deserved reputation as an investigator in this department of medicine renders anything coming from his pen interesting and worthy of attention. The volume under consideration is the second part of the Klinik du Verdanungskrankheiten, is composed of lectures delivered by the author at the Feriencurse für praktische Aertze, Berlin, and, the author states, is intended for the use of the general practitioner. The first two lectures are devoted to the examination of the stomach —methods of examination, determination of the acidity and acids of the contents of the stomach, determination of the digestion of albumen and starch, absorption and motility, and the technique of the examination of the stomach. In all of the examinations of the secretions of the stomach the stomach-tube is, of course, essential; and of all these which have been from time to time recommended, the simplest, the stomach-siphon, consisting of a piece of flexible rubber tubing of suitable dimensions, with eyelets or fenestræ in the end to be introduced into the stomach, and a funnel attached to the end projecting from the mouth, is preferred. The different methods of the analysis of the contents of the stomach are given, and the second lecture is brought to a close by a description of the technique of washing out the stomach and the electrization of the stomach, the usefulness of the latter of which, however, is questioned by some of our best authorities. In the next two chapters the stenoses and strictures of the stomach are taken up, and, of course, under this head is naturally found gastrectasis, or dilatation of the stomach, which is dwelt upon at length. While speaking of lavage in connection with this subject, the author says: "But this much is certain, that in scarcely any other place in the whole range of the therapy of diseases of the stomach can we attain such brilliant results as we can in the treatment of a case of protracted dilatation of the stomach." In Lecture V. cancer of the stomach is considered, and the author opposes the original claim of Von der Velden that in cancer of the pylorus hydrochloric acid is not present. While in this disease it has been demonstrated that hydrochloric acid is frequently absent, it has also been demonstrated that it is sometimes present, though when so, usually diminished in quantity. As to the use of drugs in this disease, while he states that none is of much benefit, he ascribes some slight virtue to condurango. Lecture VI. deals with ulcer of the stomach, and it is the best of the whole series. This interesting topic is taken up and discussed at length in a masterly manner. While at this point, we will simply state that we believe that the word Hæmatemesis should be used on page 245 instead of Hæmoptysis. The remainder of the work, consisting of six lectures, is devoted to the different forms of gastritis, the neuroses of the stomach, the relation of the diseases of the stomach to those of other organs, and the practical value of the modern chemical tests. The book is well translated, is printed in clear type upon a very nice quality of paper, and as an exhibition of the printer's art reflects credit upon its publishers.

Messrs. Lea Brothers & Co. will publish, in time for the Fall sessions of the medical colleges, a series of teaching works in the form of questions and answers, briefly and concisely embracing the subjects essential to a thorough medical education. Of this series we have received "Genito-Urinary and Venereal Diseases," "Materia Medica and

Therapeutics," and "Obstetrics." Like all of Lea's works, they are handsome and tasteful, and thoroughly adapted to the work for which they will be published.

"Cerebral Meningitis: Its History, Diagnosis, Prognosis, and Treatment." By Martin W. Barr, M.D., Resident Physician in the Pennsylvania Training School for Feeble-minded Children, Elwyn. George S. Davis: Detroit, Mich., 1892. [The Physician's Leisure Library. Single copies, 25c.]

Meningitis is a very difficult subject to write upon. It is obscure and uncertain in its manifestations, and follows no typical course. The experience of most physicians is similar to that of the author, who has never met with what might be called a "typical case" of cerebral meningitis. His task was, therefore, a difficult one, and it has been very creditably performed. He has wisely adopted a simple classification, and considers these diseases under three heads: Pachymeningitis, which may be external (acute), internal (chronic), or hemorrhagic (chronic); simple meningitis, which may be acute, subacute or chronic, with a number of varieties according to location; tubercular meningitis, which may be basilar, verticular, or diffused. Something more definite upon symptomatology is greatly to be desired, but the author has, perhaps, been as explicit as the present state of our knowledge permits. The work is the result of personal experience, and contains considerable original thought, and must prove of decided value to the general practitioner.

The following pamphlets were received from J. H. Musser, M.D., Assistant Professor of Clinical Medicine, University of Pennsylvania:

"The Uses of Fever. The Danger of Antipyretics in Typhoid Fever."

"Whooping-Cough: Its Management; its Climatic Treatment."

"Grave Forces of Purpura Hæmorrhagica."

"Tuberculous Ulcer of the Stomach."

"Some Clinical Remarks on Dysentery."

"On the Gastric Disorders of Pulmonary Tuberculosis."

"The Limitations and the Powers of Therapeutics."

"Fourth Annual Announcement of the Camden Training School for Nurses."

"Report of Abdominal and Pelvic Surgery, including Thirty-two Successful Cases of Laparotomy," by Wm. H. Wathen, M.D., Louisville, Ky.

"Retroanterograde Amnesia, with Report of Two Cases," by J. T. Eskridge, M.D., Denver, Col.

The following pamphlets were received from Dr. J. T. Jelks, of Hot Springs, Ark.:

"Two Cases of Tubercular Osteo Myoletes of Tibia."

"Blennorrhœa."

"Two Cases of Carcinoma."

"Comparative Value of Mercury and the Iodides in Treatment of Syphilis."

"Report of a Case of Gunshot Wound of Liver and Stomach. Laparotomy. Recovery.

"Some Effects of Blennorrhæa in Women."

"Early Symptoms of Hip Disease and Ætiology of Hip Disease. Treatment of Abscess in Hip Disease," by H. Augustus Willson, M.D.

"Clinical Report of Gystectomy for Polycystic Ovarian Tumor," by Prof. Howard A. Kelley.

"Gynæcological Technique."

"Excission of Tubercular Knee Joint," by H. Augustus Willson, M.D.

"Treatment of Pelvic Suppuration," by Dr. Felix Formento, New Orleans.

"La Grippe: Suggestive Letters from Eminent Men," by Dr. J. D. Burch, M.D., Aurora, Texas.

"Concerning the Employment of Light in the Treatment of Disease," by Will F. Arnold, M.D.

"A Review of Ideality of Medicinal Science," by Maurice J. Burstein, A. M., M.D.

"Abortion," by E. S. McKee, M.D., Cincinnati, Ohio.

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EDITORIALS.

Since the issue of the last number of the Journal the people of the United States, more especially those of New York City, which is the port of entry for the vast majority of the enormous number of immigrants who annually come to our country, have had Asiatic cholera literally at their doors. During that time no less than half a dozen ships having on board persons sick or dead from the disease have come into our harbor, but, through the vigilance of the health officers, they were sent into quarantine in the lower bay, where the passengers were detained either on them or in quarantine stations on land, a proper disposition being made of the baggage and cargo, the ships themselves though, after having discharged their passengers and freight, not being allowed to come up to their docks in the city. On Sept. 13, it was officially announced by the Health Board that cholera had made its appearance in New York City, and up to date there have been in all seven deaths from it. It is certain that none of those persons who had been discharged from quarantine was taken sick after arrival in the city, and the exact origin of the reported cases have not been discovered, but it is a significant fact that although these cases appeared in different sections of the city, no other cases followed them in their immediate and respective neighborhoods. This speaks more eloquently than words for the energy and thoroughness of those having the health of New York in their care, and justifies their assertion that they are reasonably certain of preventing an epidemic of the disease here. We all know how easy it is to criticise, and very unjustly criticise, those who hold important public positions; and we are sorry to say that the incidents which have led up to a necessity for preventive measures have been the occasion for a decided amount of this unjust criticism, which, however, it is pleasing to state did not emanate, except in rare instances, from medical men. Dr. Jenkins, the present Health Officer of the port of New York, has been pitilessly and mercilessly assailed both by individuals and by certain newspapers.

The former were mainly those who were subjected to the discomforts and inconveniences of quarantine, being probably worked up into abnormal conditions of mind at the time, so he can very well overlook what they said. The latter were instigated possibly by politics, sensationalism, or perhaps some of the reporters felt piqued at not being allowed that unwarranted freedom which some seem to suppose is their right in news-gathering, so he can ignore that and allow it to make no more impression on him than does water on the proverbial duck's back. He has worked conscientiously and incessantly, and above all he has accomplished the very thing for which he was appointed, viz., to protect New York, and through it the rest of our country, from the importation of disease from foreign lands. He has also demonstrated that *quarantine can be effective*, which has long been very much doubted by many people. Naturally the appearance of cholera stimulated those of the profession who are particularly interested in matters of public health. A very interesting and well attended meeting of the Section on Public Health was held at the Academy of Medicine, Monday evening, Sept. 19th. Specimens of the cholera bacilli were exhibited by Dr. E. K. Dunham, and papers were read by the following gentlemen: Dr. S. T. Armstrong: "The Present Status of Quarantine Laws, with their administration." Dr. A. L. Carroll: "How Long Shall a Cholera Infected Vessel be Detained at Quarantine ?" which the author said "could be answered in three words, 'a few hours,' except that he must state some of his reasons for it." Dr. George M. Sternberg, U. S. A.: "The Biological Characters of the Cholera Spirillum and Disinfection in Cholera." Dr. Sternberg has had a wide experience as a bacteriologist, and entertained his audience with an interesting and able paper. Dr. J. H. Raymond: "General Disinfection." Dr. Stephen Smith: "Local Measures of Protection and Relief." Dr. Jacobi then gave some suggestions to "practitioner and patient." Dr. Janeway sent a letter urging vigilance, and the meeting was then brought to a close by the president ,who spoke in relation to holding the steamship companies to a stricter responsibility in their immigrant traffic.

While no person will believe that we are free from the possibility of an outbreak of cholera, in this country, during the ensuing year, enough has been done to demonstrate that the medical men are alive to the dangers, and a greater confidence in the ability not to allow the disease to gain a foothold here is more apparent than it was a month ago.

Specialism.—The growth of specialism in medicine during the past decade has been very marked. New specialties have arisen, or rather certain departments have been exalted into the dignity of specialties, and a largely increased proportion of the profession have adopted special practice.

Professor Loomis, in a recent after-dinner speech upon progress in medicine, referred to this tendency very wittily by the remark that medicine has so far advanced that a half dozen first-class cranks will furnish a living for as many specialists. This will be best appreciated by the city practitioner, who not infrequently sees a patient whose astigmatism has been corrected by Prof. A.; whose throat has been sprayed, swabbed and cauterized by Prof. B.; whose eczema has been relieved by Prof. C., and whose wife is a semi-weekly visitor at the office of Prof. D., the celebrated gynæcologist, not to speak of Prof. E., who attends the children, and Prof. F., who does the intubating. This tendency is not confined to medicine, but has permeated every profession and trade. The reasons for this are obvious and the advantages are great. To the profession at large, while specialism has developed certain results to be regretted, it has on the whole been of the utmost benefit. As a system, it is firmly established; it is here to stay; and the ill-humored criticisms so frequently heard against it are, in most cases, unfounded. Most of the important discoveries of the past few years have been made by the special worker, and this will be more true in the future. The tendency will probably increase, but it will reach an end by self-limitation. The family physician or general practitioner will always exist, and will continue to form the bone and sinew of the profession.

The proclivity for special study and practice is, of course, greater in cities and large towns. It is to a large measure impossible in rural communities, but even here the tendency is being felt. This is due largely to the post-graduate schools which have been opened in the medical centers during the past few years. Specialists in a mild degree are developing among the country practitioners, and they are specialists in the best sense of the word. A man finds that he is seeing many cases of a special kind; experience renders him expert in their management, and he gains a favorable reputation. He perfects himself still further at a post-graduate school, and though he continues a general practitioner, his practice drifts largely in the line of his special work. Such men are often very skillful and effect cures of which their more celebrated city brethren would be proud. They are successful as specialists from the very fact that they are also general physicians. It is just here that the city specialist most frequently fails, and where error is most frequently made. He does not know enough of general medicine; he begins special practice too early. In the course of years he sees so much of certain diseases and so little of other diseases, that he attaches undue importance to the organs with which he especially deals. He regards the body as an appendage to the all-important organ which he has studied, with the liver, kidneys, nerves and other minor organs as somewhat troublesome accessories. This is by no means true of all specialists, but it is the tendency and the direction in which the chief danger in specialism lies.

There is no good reason for discord between the general physician and the specialist. The practice of the latter should consist largely of patients directed to him by the former. People should be impressed with the fact that their family physician is the person best qualified to give advice as to the choice of a specialist. The layman, in making such a choice, often makes a serious, sometimes a ludicrous error. The specialist is an inestimable boon to the general practictioner, for in him is relief found from the responsibility and perplexity of those special and complicated cases that are most trying and wearying. This demands generosity and honesty upon both sides. Lack of these qualities has prevented many a man otherwise qualified from obtaining a special or consulting practice. Any man of ordinary ability, even if he be located in a small country town, may hope by patient study and observation along certain restricted lines to gain more or less consultation practice, the most lucrative of all professional work. But for the attainment of this end fair and generous treatment of others, even of rivals, is as requisite as education and experience. It is disregard of this point that too often renders the physician, especially in the country, his own worst enemy.

Vaccination Against Cholera.—Dr. Hafkin claims to have elaborated a vaccine capable of conferring immunity against this disease in animals. He has also vaccinated a number of his medical colleagues, and reports the results in the *Bulletin Médical* of July 31, 1892. In each case he noted fever, malaise and loss of appetite for a few days succeeding the injection. He did not carry his experiments so far as to feed his friends upon comma bacilli in order to prove protective the efficacy of his vaccine. He says, however, that this has been abundantly demonstrated in the case of animals, and his experiments upon man have shown that there is not the slightest danger to be apprehended from the inoculations. But Ferrán will doubtless dispute Hafkin's title to priority in cholera vaccinations.—*Medical Record.*

It is difficult to understand how vaccination against a disease like cholera can ever prove of any value. An attack of the disease itself does not give immunity. If any method of vaccination can be found to produce that result, it must be according to laws not known to exist in any other disease. It is proper to say that Dr. Shakespeare is inclined to the belief that an attack of cholera is followed by a brief period of immunity.

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Professor of Chemistry, N. Y.

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ORIGINAL ARTICLES.

ARTICLE I.

FEMORAL AND VENTRAL HERNIA IN WOMAN.

By HENRY O. MARCY, M.D., Boston.

The student who will take the trouble to review the various methods which have been put into practice in one generation only to fall into disuse and be forgotten in a subsequent one, will note that within the last half-century the pendulum of opinion swung as far away from the attempt at surgical procedures for the cure of hernia as at any time, perhaps, since the days of Celsus. Even now, when the modern surgeon invades every cavity of the human body with a seeming impunity which borders almost upon recklessness, the cure of certain forms of hernia is acknowledged as the opprobrium of our art, and if ever to be undertaken, only in cases of the rarest exception.

In contrast with this, the following quotation from Arnaud[1] would do justice to the most enthusiastic surgical disciple of to-day: "It is only since the beginning of the present age that cures truly singular have been performed. The knowledge which has been acquired in anatomy, and the discovery of new kinds of ruptures, have enabled skillful surgeons to correct the methods prescribed by former authors, and to invent new ones, according to the exigency of the case. This superiority in the knowledge of anatomy has taught them methodically to treat ruptures accompanied with putrefaction, which used within these twenty years to be abandoned to the mere care of Nature. It has given them the boldness to cut away with success two, four, or even six feet of the mortified intestine in order to secure the rest from gangrene. By this exact knowledge in anatomy they are cured of their prejudice concerning the epigastric artery in inguinal ruptures. They have learned to preserve the spermatic vessels in crural ruptures of men; nor is there any rupture, however complicated with adhesions, which they do not surmount. To open the intestine in case of necessity, and to search out, in the recesses of the abdomen, the most remote strangulations, are achievements only to be found in the most modern surgery, which is not without expedients in the most desperate cases. To repress any doubt of this truth, nothing is necessary but to look into the memoirs of the Academy of Sciences, at Paris, where the most surprising cures of this kind will be found, such as the people looked upon to be supernatural, until they were insensibly familiarized to the miracles of art. He who reads Mr. Garengeot's *Treatise of Operations* will see the dexterity requisite in the different methods necessary for the cure of these diseases, and find all the means of success laid down according to the greatest masters which our nation has seen in the last or the present age."

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[1] George Arnaud, Treatise on Hernia, London, 1748.

The opportunity is not afforded us, at this time, however interesting and profitable it might be, of wandering amid the paths of history, but closely associated with Arnaud were Le Dran, Heister, Percival Pott, and many others, under whose leadership operations for the cure of hernia were freely undertaken and followed with the most excellent results. Early in the present century, Camper, Cloquet, Cooper, Gimbernat and Scarpa practically exhausted the subject of the normal and pathological anatomy of hernia. The perfection of the operation for the cure of hernia was, however, reserved entirely for modern surgery.

The history of the anatomical researches of the structures involved in femoral hernia and their relations constitutes one of the most interesting chapters in anatomy. The importance of a correct anatomical knowledge was recognized by Albinus and Heister. The sheath of the femoral vessels was, at this time, a subject of marked discussion, and was then called the cellular substance of Ruysch, who first described it. This tissue, however, Heister considered as one of the two layers of membrane of which the peritoneum was commonly supposed to consist. Gimbernat made careful dissections, and clearly and accurately described them. He pointed out that a lamina of the fascia iliaca passes over the pectnieus muscle and is attached to the crest of the os pubis, and there unites with the ligamentous expansion which bears his name and terminates upon the same crest. "By this union is formed a species of ligament which passes along the crest immediately above the insertion of the superior extremity of the pectineus muscle; from this division of the crural arch, an aponeutric sheath arises at the top of the thigh, beginning at the crural arch itself, close to the body of the pubis, so that the expansion which has been described, and which is sent from the internal edge of the arch, passing behind the iliac vessels, forms the posterior wall of the sheath, while the anterior wall is formed by the external edge of the fascia lata."

Sir Astley Cooper added materially to this knowledge by his investigations of the transversalis fascia, and he demonstrated that a process of it, in forming the femoral sheath, constituting its front wall, passes immediately behind Poupart's ligament, and forms a connection with its thin posterior edge. Mr. John Gay,[1] who made an exhaustive study of the anatomical relations in femoral hernia by the careful examination of over seventy subjects, writes that—"according to my examinations of this structure, both before and subsequent to maceration of the parts, it appears to be formed in the following manner: The *inner* portion of the fascia transversalis being extended behind the crural arch downward into the thigh, in front of the femoral vessels, constitutes the front wall of this sheath; while the lateral expansion of this process, each taking converse direction in relation to each other, constitutes the iliac and pubic walls. These unite *behind* the vessels and in this manner complete the sheath. Thus, in the part of the thigh under consideration the sheath is wholly formed by an expansion of the transversalis fascia."

It might seem almost like a refinement of anatomical differentiation to spend this vast amount of time in special research upon seemingly unimportant tissues, which hold the relationship only to the vessels and the parts which surround them, but these master anatomists were actuated by a far higher purpose than that of hair-splitting differences, since they sought to demonstrate Nature's defective construction which makes femoral hernia a possibility. For our present purpose, in offering a contribution upon this subject to a society who are all learned anatomists it will be sufficient to point out that the natural provision for an opening to permit the passage of the femoral vessels must be sufficiently large to provide for a considerable variation in the amount of blood passing through them, and that the loose-meshed connective-tissue sheath is a wise provision for their support. I pass over purposely the further consideration of the anatomical relationship of the other structures involved in femoral hernia, since this well-worked field offers little that is new or important. It is well, however, to emphasize the relation of the obturator artery to the femoral ring, since once in every three or four individuals it arises by a common trunk with the epigastric artery. This vessel occasionally curves along the margin of Gimbernat's ligament, as it passes to the obturator foramen, and when this occurs it is very likely to be divided in the operation for strangulated femoral hernia.

It is easily understood, from consideration of the anatomy of the parts, that the femoral ring, although reinforced and protected in such a marvelous manner, must be a weak point in the abdominal wall. By congenital defect, laxity of tissue, or by long-continued pressure, the peritoneal covering over the ring becomes pouched, and alodgment of the abdominal contents serves as a wedge to force open the canal. The greater size of the canal in women, together with the firmer character of the inguinal ring, renders this variety of hernia more common in the females.

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[1] On Femoral Rupture, London, 1848.

When the hernial contents are strangulated, this stricture may be found in the neck of the sac. This, however, is rare. More commonly it is at the juncture of the process of the fascia lata with the edge of Gimbernat's ligament, or at the margin of the saphenous opening.

Operation.—When the operation for a strangulated femoral hernia is under consideration, it is well to remember that pathological changes have greatly modified the normal anatomical relationship of the parts. The tissues covering the tumor, if of long standing, are often blended into a single thin-walled sac. The division of the constriction is usually best made by carrying the probe-pointed knife upon the finger carefully through it, and cutting obliquely inward and upward toward the umbilicus. It is often surprising to note that the division of a few sharp-edged tense fibers is quite sufficient for the relief of the constriction. More commonly there is about a half-inch space between the ring and the epigastric artery; should this vessel be divided, however, it is not attended with very serious consequences. As a rule there can be no doubt but that, in femoral hernia, the sac should be opened and examined. This is even more important than in the other varieties of hernia, since the sharp-edged narrow constriction often causes a fatal intestinal lesion in less than a single day.

Having safely returned the abdominal contents, the subsequent procedures for the purpose of cure is the subject to which I wish especially to call your attention, and it is the reason for the presentation of this paper.

The first factor for consideration is the disposition of the hernial sac. As a rule, it is better that it should be dissected to its very base and freed of its attachments quite within the ring. In doing this we are certain that no possible constriction at the mouth of the sac, still grasping an unreduced portion of the intestine, has been overlooked. The redundant, deformed peritoneum may generally be considered as a pathological factor to be removed. This, in my judgment, is best done, after having thus freed the sac, by making it tense and ligating or, better, suturing it evenly across at its base and resecting.

Mr. Macewen, in his able article,[1] reports a number of cases of femoral hernia treated satisfactorily by the buttressing of the parts with the intra-folded sac, stitched within the ring.

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[1] British Medical Journal, December 10, 1887.

Dr. H. W. Cushing,[1] of Boston, gives a detailed account, with illustrations, teaching the mode of applying the sutures, where he adopted the Macewen method in the cure of a case of femoral hernia in a boy, and, after the return of the sac folded to make a pad, he closed the ring with silk sutures. The cure was complete.

Femoral canal. The next step in the operation is the closure of the femoral canal. After having returned the sutured base of the peritoneum within the ring, protecting the femoral vessels with the finger, by pressing them in their sheath gently outward, introduce a curved needle, with eye near the point, threaded with tendon, from below through the thick pubic portion of the fascia lata forming the external lower border of the ring upward through Poupart's ligament, as far outward as may be judged necessary to produce the proper constriction of the parts upon the vessels; unthread the needle, rethread with the opposite end of the suture and withdraw it. This makes a constricting loop, closing the outer border of the enlarged femoral canal upon the sheath of the vessels. A second continuous stitch is taken through the same tissues, parallel to the first, from one-third to one-fourth of an inch nearer to the median line; the third continuous stitch is introduced into the portion of the fascia lata, external and parallel to the saphenous vein, in the same manner as the first, and is carried upward to include Gimbernat's ligament and such portions of tendinous structures as may have been divided. If the operation has been undertaken for strangulation, three stitches are generally sufficient, but a fourth, or as many more may be taken as are required to close evenly and firmly the inner portion of the ring. By suturing in this manner the margins of the ring are firmly closed, and the thick reinforced edge of the fascia lata is joined to the borders of Poupart's ligament.

The lower part of the canal is obliquely elongated and reformed by drawing inward the weakened dilated upper and outer border of the saphenous ring and attaching it to the firm pubic fascia. The folding over of the fascia in this way carries the saphenous opening quite a little to the inner side of its former site, while the femoral vessels are undisturbed in their sheath. The superficial tissues and skin are closely held in approximation by buried tendon sutures. The wound is sealed with iodoform collodion without drainage. It is almost needless to remark that the strictest aseptic care is maintained during the entire operation, in which irrigation with a weak sublimate solution serves an important part.

[1] Boston Medical and Surgical Journal, December 6, 1888.

There is but one rule, and it cannot be too emphatically enforced: the *aseptic* suture must be *aseptically* applied in *aseptic* structures, and the wound must be maintained *aseptic*. The failure of either of the above-mentioned factors not alone endangers the result, but may be followed by the most serious consequences. Modern surgery demands of the operator every safeguard to insure an aseptic wound, but he who uses buried animal sutures must take, if possible, even greater precautions, since infection carried into a wound thus firmly closed, is for obvious reasons, attended with much greater danger than in a wound united by interrupted sutures which, at the end of a few days, are to be removed, and where drainage is relied upon to permit the escape of infected or foreign material. It is, in part, on account of defective technique, the use of drainage, and the too often septic wound, that failure to effect a cure after hernial operations so generally occurs.

In Dr. William T. Bull's[1] report of sixty-nine operations for the cure of hernia, thirty-seven, over fifty per cent., were followed by suppuration. He writes: "I am sure there are more cases of prolonged suppuration and slow-healing sinuses, due to local sepsis, than in other wounds."

In the present state of our knowledge, notwithstanding the utmost care and precaution, no operator can be absolutely certain that any given wound is not infected, and that the processes of repair will go on without disturbance. However, under the modern methods of surgical operations and the treatment of wounds thus made, the risk of infection is so minimized that as a matter of practice it is not taken into account. Indeed, each year's experience adds to my own assurance that in every wound, deliberately made in uninfected tissue, the divided structures should, as far as possible, be closed, layer by layer, with buried animal sutures, including even the superficial tissues and skin itself, which latter is to be dried and immediately sealed with germ-proof collodion. In all such wounds the drainage-tube is far worse than useless—a positive source of danger—and when used necessitates cumbersome, expensive, antiseptic dressings, involving unceasing care on the part of both nurse and surgeon. When the location of the wound is in the region of the groin, as in hernia, no matter how applied, these dressings often fail to protect the wound, and sepsis follows.

Under the most favorable circumstances with an aseptic wound, those portions of divided structures which are held apart by the drainage-tube must unite by the comparatively slow process of granulation. I hold in the highest esteem Dr. Bull's ability as a surgeon, and feel, in common with many others, a deep obligation for his judicial article, giving a careful analysis of the large number of cases of hernia upon which he has operated. I understand and appreciate the difficulties which he has had to meet and encounter in operating in a general hospital including a large class of neglected strangulated herniæ, conditions where the integrity of the parts were often seriously compromised by unwarranted delay and injudicious efforts at reduction. I am also well aware of the care exercised under his direction in the subsequent treatment of his patients; however, since he is quoted as an authority, showing that with all our vaunted measures of modern wound treatment a majority of hernial operations are in a measure confessed failures, it becomes us seriously to criticise and inquire if this is the best result that can be expected in this department of surgery. I believe we are warranted in emphatically declaring in the negative.

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[1] Transactions New York Medical Association, 1889.

The all-important factor for cure in inguinal hernia, after the removal of the sac, in a manner to leave the reformed peritoneum smooth, is the restoration of the obliquity of the closed inguinal canal. This can be effected only by buried sutures, and it is easy of demonstration that along the line of an *aseptic* animal suture introduced aseptically into any healthy structure, there follows an abundant proliferation of new connective tissue cells, which replace in a large measure the absorbed sutures and greatly reinforce the enclosed structures. In this lies one of the chief advantages of the tendon suture over silk, an importance never to be forgotten in the ligation of a large vessel and in the application of buried sutures, perhaps nowhere of equal importance as in the reformation of the obliquity of the canal in inguinal, and its closure in femoral hernia. I am certain that carefully made wounds in healthy tissues, even when of considerable magnitude, as in the amputation of a breast, should be restored as above directed. Repair goes on by primary union as in a subcutaneous wound, with not more than 2 or 3 per cent. of failures, while 5 per cent. should be ample for operative wounds in general hospital practice.

I have been led to this seeming digression, since a method has been devised and widely adopted for obviating the dangers and lessening the ill effects resulting from suppurating wounds, which are recognized as so likely to occur in operations for the cure of hernia. This is the open-wound method so ably advocated by the distinguished surgeon, Dr. Charles McBurney, of New York, and called after his name. This method, however, was advocated and widely practiced more than a century ago by Petit, Le Dran, Arnaud, and their followers, when we consider the treatment of wounds at that time, with far better reasons than to-day. However, the great percentage of deaths from peritonitis and sepsis caused the abandonment of these surgical measures in large degrees, until the knowledge of the rôle of bacteria in wounds led to the antiseptic dressings and the modern methods of treatment.

The essential factors urged by Dr. McBurney, are, first—and I think most wisely—a free dissection of the parts, the ligation of the peritoneal sac at its very base, and its removal; second, in order to prevent its closure the wound is deliberately filled to its very base with antiseptic dressings. Repair goes on slowly until the parts are finally closed by a firm, strong cicatrix. This method is effective in preventing suppuration and germ contamination, but the wound heals slowly and often leaves a tender and painful cicatrix. I am quite sure that cure is more likely to remain permanent after this method of treatment in femoral than in inguinal hernia. Under recent date Dr. McBurney writes me that "in femoral hernia, he has never known a single failure when he had treated the wound by his open method." Since I have had no personal experience with the method advocated by Dr. McBurney, and my criticisms are based upon general principles, I quote from Dr. Bull's paper, as he has had considerable experience in operating for the cure of hernia by this method: "I am not convinced that it is correct in principle, and I believe when time has permitted its results to be tested that it will be found defective in practice. It is certainly a perversion of our knowledge of the phenomena of repair to assume that the granulative cicatrix is stronger than that of primary union. There is no other region of the body where surgeons of experience would act in accordance with this idea."

I began to use the buried animal suture, in operating for the cure of hernia, in 1871, and since that time have for the most part used it in the closure of all operative wounds; and in all my operations for the cure of femoral hernia, where the integrity of the intestine has not been involved, I have never observed a subsequent symptom indicating danger, and, so far as I have been able to learn, there has not been a single recurrence. Pain and discomfort are practically wanting, and even edema of the tissues does not ensue. After a few days in bed the patient is allowed to sit up. In some instances I have permitted the use of the chair the second day without any apparent harm.

It does not seem necessary to make a special plea in the advocacy of operative measures for the cure of femoral hernia. This variety of hernia is admitted by all as one of the most troublesome and difficult to retain by instrumental supports. When any portion of the abdominal contents escape through the ring, its reduction is attended with much greater difficulty than in the other varieties, owing to the firm, tense, inelastic character of the constriction.

When not reduced, the danger to the parts constricted is in like ratio increased for the same reason. If it can be demonstrated that femoral hernia is curable, then the advisability of the operation should be taken into consideration, and if it can be proved that the cure remains permanent, it adds much to the argument in favor of operative measures: but when it is demonstrated that, under proper precautions, based upon an accurate anatomical knowledge of the structures involved, the operation is not severe, does not cause long detention from active duties, does away with the punishment inflicted by the lifelong wearing of a truss, and is almost without danger, there remains no reason why all the sufferers from femoral hernia should not profit by surgical measures and demand to be restored to the ranks of active service.

The operation for the radical cure is obviously much more simple where the conditions pertaining to incarceration or strangulation are absent. The normal anatomical relationship of the parts is usually not much changed. The tumor is generally small, the omentum or intestine easily returned, and the sac may be so thin and small as to become an unimportant factor. The danger of infecting the general peritoneal cavity scarcely exists even in the hands of an inexperienced operator. The wound does not usually require to be made nearly as large as where operation is undertaken for a strangulated hernia, yet it is well to err on the side of a free dissection. The operator must be sure of the anatomical relations of the parts. The femoral vessels must remain uninjured in their sheath. The greater danger attends the introduction of the first stitch, since this closes the canal on the side toward the vessels, and a puncture of the great femoral vein with the needle might result in the most serious consequences. However, this warning is of little moment to the experienced surgeon, since the sheath of the great femoral vessels is the first anatomical landmark to be located with exactitude.

My purpose is by no means to write exhaustively upon the interesting subject of the cure of umbilical and ventral hernia in the female. Every surgeon is brought face to face with the most serious dangers to life in the treatment of old, strangulated, umbilical hernia, and it is a common experience to bemoan a life lost by the delay and neglect attendant upon the effort at relief. Until within a very recent period few complications in surgery have been held in greater fear since the infective peritonitis, which often followed operative measures, ended so fatally.

I am constrained to believe, from my own experience, that by far the larger number of cases of strangulated umbilical hernia are still improperly treated owing to this dominating fear. As in the other varieties of hernia, prolonged and repeated attempts at reduction, with the application of far too great and oftentimes illy adapted force, are made; and even after failure by these measures, inexcusable delay frequently follows before the physician, the friends and patient are educated up to the undertaking of what they consider the *dernier ressort*, surgical interference—and which, indeed, if relied upon at this period of the disease, is associated with extreme danger, a danger to be emphasized as dependent not upon the surgical measures undertaken for the relief, but upon the condition of the incarcerated abdominal organs, which have been subjected to the criminal manipulation and neglect of an incompetent adviser.

The number of lives lost annually by want of proper treatment is far greater than is generally supposed, and it is hardly possible to emphasize too strongly the condemnation of the Micawber-like policy, which is the too common practice in dealing with this serious lesion.

There is but one surgical rule to be adopted in the treatment of strangulated umbilical hernia—an immediate and careful attempt at reduction should be made under ether, and this failing, the constriction must be at once divided. This generally necessitates the opening of the sac, which is important, even in recent cases, in order that the surgeon may determine the condition of the constricted contents. When it is found that these admit of a safe return into the abdominal cavity, the problem then confronting the surgeon is, Shall an effort be made to effect a permanent cure of the disability?

I think the consensus of surgical opinion is in favor of an affirmative reply; and that the large, old, deformed sac should be resected and removed as a pathological factor. Having done this, the more common method advocated is to join the pillars of the ring with deep interrupted sutures, preferably of wire, the application of an antiseptic dressing, and a supporting abdominal bandage. I wish especially to invite your attention to women with thick, heavy abdomens, suffering from irreducible or uncontrollable umbilical hernia. The hernial contents often become, at an early stage of the disease, adherent and irreducible. It is at first for the most part omentum, and later is associated with a more or less easily replaced loop of intestine. This in time may become adherent, and the patient is rendered, in a degree at least, an invalid, subject to colic pains with the whole catalogue of intestinal disturbances. These permanent tumors are oftentimes of very considerable size, and at the best are imperfectly supported by trusses especially designed for this purpose. The patient is limited in physical exertion, is constantly more or less a sufferer, and ever in danger of intestinal obstruction.

What are we to do in the case of this very considerable class of invalids? is the question which is constantly presenting itself to the surgeon for solution. The early surgical writers, from Celsus down to the French masters of the last generation, advocated and practiced a variety of operations for the cure of umbilical hernia. The chief difference of opinion was in reference to the disposition of the sac: should it be ligated unopened?

We now see clearly the reason why in the larger experience it was found advantageous to ligate the sac at its base unopened, since this was constricted sufficiently to produce necrosis, and the resulting wound was almost necessarily an infected one, healing only slowly as a suppurating wound. Beginning with the present century, operative measures for the *cure* of hernia were almost absolutely abandoned, and the first case of which I find any record in America, where the operation was deliberately undertaken for the cure of an old, large, umbilical hernia, followed by recovery, was that published by Dr. H. R. Storer,[1] 1866, now of Newport, R. I. I well remember the storm of criticism evoked in Boston at the presumption of doing an operation so dangerous to life, which the verdict of surgical opinion had pronounced as unwarranted, an opinion which I regret to believe still generally prevails, and which a prominent physician of Boston, within a few days, in speaking of Dr. Storer's operation, characterized as foolhardy and unwarranted.

I cannot question but that the opinion of a majority of the members of this association, accustomed as they are in their daily experience to laparotomies undertaken for a variety of purposes, will consider an operation attempted for the cure of this troublesome affection far more favorably than the general surgeon or the rank and file of the profession.

All will agree that the class of sufferers under consideration are seriously disabled, and ever at the risk of a possible danger to life. The question at issue is to determine if cure is possible, and if the measures proposed for this purpose are of a character that warrants their advisement and adoption. To the questions thus presented, I think the evidence is sufficiently ample to give an affirmative answer. That cure is effected by removal of the sac and closure of the opening in the abdominal wall few can question, and that the cure generally remains permanent there is abundant proof. The danger of the operation has been considered sufficiently great to regard the risk as unwarrantable, and this is the factor of the problem that needs most careful elucidation.

It is easy to comprehend why laparotomy, two decades ago, was undertaken with fear and trembling, when a large proportion, if not the majority, of the patients operated upon died from an infective peritonitis. There are few of us who do not mark the present contrast with a feeling akin to wonder and astonishment.

The operation, undertaken for the cure of umbilical hernia, when the contents of the tumor are non-adherent and can be returned, may justly be considered as an explanatory laparotomy, to be done with all the care of the modern aseptic operator. He who is skilled in making and maintaining an aseptic wound has little to fear, since the danger is almost altogether summed up in the one word—infection.

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[1] New York, Medical Record, 1866-67, pp. 73–76.

In large, old, irreducible herniæ the problem is less simple. Adhesions of the omentum are unimportant, although there may be bleeding-points in the separated parts. The omentum itself is not seldom so altered at the point of constriction about the ring as to be separated with difficulty, and so deformed as to make its return within the abdominal cavity ill-advised. It is not, however, a serious complication to remove considerable masses of omentum and to control the resultant hemorrhage. Sew through the base of the unconstricted part with one or even two lines of *continuous* sutures. It must be remembered that necrosis, by a too firm compression, such as too commonly follows from ligation, is to be avoided. Compression evenly applied, although quite moderate, is sufficient to control any ordinary hemorrhage. When loops of intestine are adherent, much care is demanded in separation, and oftentimes it is wiser to resect a portion of the sac at the point of adhesion. A few light running stitches are sufficient to intra-fold this, a precaution to be recommended before returning the intestinal loop into the abdomen.

In umbilical hernia the sac differs essentially from that in the other forms of hernia, in that the whole peritoneal pouch is generally closely united to a thinned-out cutaneous investment. This skin covering the sac is of no value in the restoration of the parts ; its vascularization is greatly diminished, and when, under favorable circumstances, a portion of it is retained for a special reinforcement to the parts, its vitalization is so defective as to break down easily and complicate the repair processes. It is therefore better, as a rule, to resect the peritoneal sac and its external envelope quite to the margin of the ring.

The reinforced bands of connective tissue which surround and fortify the ring are subject to considerable modifications of treatment, dependent upon their disposition. When the opening is small, two or three deep stitches may be sufficient to unite the edges of the ring and hold them in firm apposition. If the opening of the ring is considerably larger and the edge of the ring sharp and firm, under favorable conditions I do not hesitate to recommend following down the peritoneal folds of the sac and separating them quite within the edge of the ring, and joining the peritoneum with a line of continuous tendon sutures before resecting, as advised in the treatment of the sac in other varieties of hernia. This has its advantage, in that the abdominal cavity is thus shut off from extraneous contact, and the subsequent steps of the operation can be conducted, if desired, under the protection of irrigation. Moreover, it refreshes the edge of the ring, which favors a better reunion of the parts. The edges of the ring are often advantageously split laterally, which permits the union of the parts by a double row of buried continuous sutures.

Again, it is sometimes wiser to resect the ring altogether and close the walls of the abdomen as in an ordinary laparotomy.

I do not hesitate to advise the use of the deep, double, *continuous* tendon suture, applied in the same manner as recommended in femoral hernia, only the needle and tendon should be of a larger size and the sutures taken at a considerable distance away from each side of the margins of the opening, in order to coapt and evert the enclosed portions. By the introduction of the sutures in this manner, as also in the splitting of the edges of the ring laterally, the object gained is the thickening and reinforcement of the parts.

The superficial tissues are to be joined by a line of light running sutures, as also the skin itself, the needle penetrating from side to side the deeper layer only, and the dressing is completed by the application of iodoform collodion, reinforced by a few fibers of cotton. Since the patient generally has heavy abdominal walls, it is well to apply a rather firm, wide bandage. Almost the only subsequent care necessary is to maintain the patient at rest in a position where the recti muscles are not called into use.

I have had occasion to operate upon a very considerable variety of umbilical herinæ where I have put in practice the measures above recommended. Although, in a number of instances, I have resected considerable portions of omentum, I have never seen any ill results therefrom, and in no case where the integrity of the intestine was not involved has the patient even approached the danger line. So far as I have been enabled to follow my cases, cure has not alone been speedily obtained, but it has remained permanent.

Dr. Championnière, of Paris,[1] writes: "I believe the urgency for the cure of umbilical hernia to be very great, and I do not hesitate to advise every young woman, whether the hernia be large or small, to be operated upon, since she is doomed her life long to a painful and dangerous infirmity. The operation now is excellent, and the danger is not materially greater than in other varieties."

He advises the dissection of the sac to its very base, suturing across and removing it. He closes the walls with interrupted catgut sutures, applied in layers, outside of which are generally stay sutures. "The ideal of hernial surgery is, that operations should be done before the tumor becomes very large. We should then avoid the descent of the large intestine, the great size of the tumor and the complications of the general health." This author is assured that if suppuration, even in slight degree, ensues, the chances of relapse are greatly increased.

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[1] "Etude sur la Cure radicale de la Hernie non-etranglee.' Journ. de Med. et Chir., 1888.

It is now nearly five years since I adopted the method of uniting the abdominal walls by means of buried animal sutures in all cases of laparotomy, and in considerably more than one hundred cases which I have thus united, so far as I have been able to follow them, there has been but one case of ventral hernia. In this case I performed hysterectomy for the removal of a large fibroid tumor, and the abdominal walls had been for a long time extremely attenuated. In this manner I cured one case of ventral hernia, where the opening was of considerable length, extending below the umbilicus, and the tumor the size of an adult head.

The various forms of large ventral hernia, other than umbilical, are usually the result of injury to the abdominal wall, more commonly following laparotomy. Some authorities state that ten per cent. of all laparotomies are followed by hernia. I think this is a large estimate, but abdominal surgery undoubtedly has greatly increased this class of sufferers. When the result of injury, the peritoneal sac may be wanting. There is very rarely a firm, inelastic ring at the base, and strangulation far less commonly supervenes; but a marked degree of invalidism often results from the difficulty of the retention of the abdominal contents, and operation is advised when the disability is at all marked. The technique is exceedingly simple, consisting of reduction of the hernial contents, resection of the sac, and a firm closure of the abdominal walls as recommended in umbilical hernia.

No chapter in the history of surgery surpasses in interest and profit that of wound treatment in the last two decades. The biological investigations of bacterial growth in its omnipresent energy and potent influence over the human race for good or evil, are still so recent that we are yet unable fully to appreciate or fairly judge of their importance and value. Truth is ever more marvelous than fiction, and the new world to which we are introduced by means of the modern microscope, although infinitely small in its individual membership, possesses a power infinitely great over the higher organisms from birth until death. So fundamental and far-reaching are these hitherto unknown factors of biological character that they underlie, and in large measure modify, our very existence. Without their potent energies the very life processes must, in a short period, cease upon our planet, dependent as they are upon the never-ending round of the transmutability of material upon which life itself must exist.

By the misdirected force of this invisible power the higher organic life is ever threatened—known to us under the various names by which we call the more common and fatal diseases. Introduced into wounds, these organisms become agents endowed with the highest potency of a death-dealing character. By a better knowledge of our invisible vital surroundings, many of the hitherto inscrutable mysteries, fraught with pain and suffering and the foreshortening of our very existence, are being made clear. The hidden rocks and reefs so fatal, during all the centuries, to the barks of life, launched upon the great ocean of existence, with painstaking care and fidelity are being mapped and charted. This work of the present generation is elevating medicine and surgery from an art into a really great science—God's own law of wonder-working from the infinitely small to the infinitely great—science, the gospel of a new dispensation; knowledge, which has its better definition as pure and simple Truth.

ARTICLE II.

LA GRIPPE—SUGGESTIVE LETTERS FROM EMINENT MEN.

By J. D. Burch, A.M., M.D.,[1] Aurora, Texas.

This association has coughed and sneezed, hawked and wheezed, through three consecutive epidemics of la grippe, and the writer has not the slightest idea of asking the members to labor up from a probable epidemic 415 B. C. to this good year 1892, through the chronology of influenza, la grippe, blitz katarrh.

The Italian name, "Influenza," was most familiar to my boyhood days. The Italians believed the disease due to the "influence" of the stars—hence the name "influenza."

If, after our experience of the past winter, our scholarly brethren of Germany would again take up *their* name for this epidemic catarrhal fever, "blitz katarrh," and recoin it into "donnern und blitzen" (thunder and lightning), I think it would be declared legal tender nomenclature in Texas.

Hurrying through the centuries, from an attack on the Athenian army in Sicily more than four hundred years before Christ, we come more definitely to the epidemics of 1173, 1239 and 1299. Then we will glance at Gluge's chronological table, beginning in the fourteenth century, and by interjecting dates from the highest authorities, make, I believe, the most perfect table so given. As Dickens' word painting of love, we behold it "an old, old story."

Fourteenth century—1323 and 1326. Fifteenth—1410, 1411 and 1414. Sixteenth—1510, 1557, 1562, 1574, 1580 and 1593. Seventeenth—1658, 1669,1675 and 1693. Eighteenth—1708, 1712, 1729, 1732, 1733, 1742, 1743, 1761, 1762 and 1775. Nineteenth—1800, 1803, 1831 and 1833. Aiken would add 1311 and 1403. Wilson has gotten from different authorities 1558, 1591, 1610, 1626, 1627, 1642, 1643, 1647, 1655, 1688, 1709, 1730, 1737, 1738, 1757, 1758, 1767, 1772 and 1788. Watson mentions 1782; Dr. Rush, 1790; Webster, 1795, 1797, 1798 to 1803. Many epidemics in Europe and America from 1788 to 1890. Condie gives 1787 and 1805 to 1827; Currie, 1807; Condie, 1816, 1826, 1830, 1832 and 1837. Many from 1837 to 1850–51; 1843, 1847, 1848, 1857, 1858, 1860, 1864, 1867, 1874 and 1879. Among the chief epidemics may be mentioned 1762, 1782, 1787, 1803, 1833, 1837, 1847 and 1889. Texas will remember 1889, 1890, 1891 and 1892.

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[1] Read before the Texas State Medical Association, 1892.

The epizootics of 1872 and 1880 will be remembered by all lovers of the horse—the doctor's faithful friend. Those were epidemics of influenza, as shown by the morbid anatomy. I had a favorite saddle horse standing in a livery stable where there were a few less than forty horses. Thirty of these began to cough the same night or early morning. By evening of that day all were coughing.

This reminds me of the loss of two fine cows in Kentucky from what I there called "Texas fever." Here I would call it "Spanish fever." So in Italy they spoke of la grippe as the "German disease." In Germany they called it the "Russian pest." In Russia they would not foster the child, but said it was "Chinese catarrh." In America we can safely say it is a "foreign devil," and petition against its naturalization.

Our chronological table is valuable in several respects. It certainly upsets the old idea that the epidemics were cyclical.

Hand in hand walk an epidemic and pandemic catarrh. With a promise not to be prolix, and with obvious design, I give a few lines from Wilson: "In the year 1830 began a series of epidemics remarkable for their wide diffusion and the rapid succession with which they followed one upon another. The disease began in China; in September it reached the Indian Archipelago; it swept into Russia and invaded Moscow in November; in January, 1831, it was raging in St. Petersburg; March found it in Warsaw, April in eastern Russia and Silesia; in May it prevailed in Denmark, Finland and a great part of Germany, and in the same month it fell upon Paris; in June it was in England and Sweden; it was still creeping about middle Europe, and lingering about Great Britain at the end of July; in the early winter it swept southward into Italy and westward across the Alantic to North America, and was still harrassing the inhabitants of certain regions of the United States in January and February, 1832. Meanwhile it continued in the East, spreading to Java, farther India and the Indian Archipelago. It continued in Hindostan after it had died out in Europe. But in January, 1833, it again visited Russia, and rolled thence southward and eastward over most of Europe. It is recorded that by February it had reached Gallicia and eastern Prussia; in March it was in Prussia, Bohemia and Warsaw, and had extended to Syria and Egypt; in April to many parts of Germany and Austria, and to France and Great Britain. Midsummer found the disease yet prevailing in some districts of Germany and north Italy, and in the early autumn it was in Switzerland and eastern France; in November it visited Naples. Epidemics so frequent, so wide spread and so unsparing of individuals wherever the disease appeared, could not fail to excite a deep general interest."

In the same paper I recently saw recorded the deaths of the eldest son of the Prince of Wales, two cardinals in the church of Rome, and innumerable peons, like myself, in the great work of life. Sir Morell Mackenzie, one of our distinguished specialists in throat and lung diseases, fell a sacrifice to la grippe; Dr. D. Hays Agnew more recently. Truly, it is no respecter of persons, nor is it baffled by surroundings. Epidemics have flown on the wings of the swift over Europe in six weeks, or have gone creeping on the feet of the sloth in six months.

Writing of 1833, Watson says: "On the 3d of April of that year—the very day on which I saw the first two cases that I did see of influenza, all London being smitten with it on that and the following day—on that same day the Stag was coming up the channel, and arrived at 2 o'clock off Berryhead, on the Devonshire coast, all on board being well at that time. In half an hour afterward, the breeze being easterly and blowing off the land, forty men were down with the influenza, by 6 o'clock the number was increased to sixty, and by 2 o'clock the next day to one hundred and sixty."

Condie, writing in 1858, says: "In its several visitations in this country it has usually commenced in one of the Eastern States and extended southward along the seaboard with more or less rapidity. In 1807, however, it showed itself first in New York, spreading thence, as from a center, in every direction. It reached Canada on the north and the Southern and Western States in the course of three months. The amazing rapidity with which it diffused itself over the American continent resembled more the fleetness of the wind than the natural course of a disease." Plainly, this also shows that there is something in the atmosphere that is the exciting cause. Yet it is to a limited degree portable and contagious. Much proof could be offered, but it is unnecessary Watson calls attention to numerous instances "in which the complaint. has first broken out in those particular houses of a town at which travelers have recently arrived from infected places." Wilson quotes Drs.

Guiteras and White: "An American gentleman in bad health contracted the disease in London, improved, suffered a relapse shortly afterward in Paris, and died there at the end of December, 1879. His body was embalmed and sent home. Following the exposure of the remains of this person to the view of his family in Philadelphia there was an outbreak of influenza, with characteristic symptoms, which affected, in the first place, members of the family; afterward, friends living in close intercourse with them; next, the medical attendant of some of them, and, finally, the housekeeper and a patient or two of one of the physicians who wrote the paper, the whole number affected in Philadelphia being eighteen at the time of publication of the account. Subsequently two or three other cases were developed, but the disease did not extend beyond the immediate circle of those in direct communication with the invalid."

Noah Webster is authority for the statement that the epidemic of 1647 was the first mentioned in American medical history. In 1732–33 Saxony and Poland had an epidemic; thence to Germany, Switzerland and over Great Britain to France, Italy and Spain, to North America. We had la grippe in 1737, 1738, 1757, 1758, 1761, 1767, 1772 and 1781. Many epidemics in America during 1788 and 1790. Webster says: "The influenza of October and November, 1789, and that of April and May, 1790, were very general or universal in the United States, and unusually severe. A like influenza prevailed in the winters of 1825 and 1826." We suffered, indeed, from 1805 to 1827, 1831 and 1832; from 1857 to 1864. Da Costa gave a valuable account of the epidemic of 1879.

The great epidemic of 1847–48, described by Peacock as seen in London, surpasses all others.

There are exceptions to the rule, but epidemics usually prevail two months or less time in a certain locality. It is no respecter of persons, regions or countries. It has attacked the antipodes simultaneously; it has marched against the prevailing winds. Nor does the temperature of the atmosphere arrest it, as frost does yellow fever. It basks in the sunshine and hurries through the frost. Truly a cosmopolitan king. Able writers believed la grippe depended on telluric influences. O'Neale, Henle and Holland some thirty-five years ago advocated strongly the animalcular theory as a cause. So late as 1858 Mr. (afterward Sir Thomas) Watson, probably the greatest writer of his day on the theory and practice of medicine, said to his London classes: "Another hypothesis, more fanciful, perhaps, at first sight than these (telluric, atmospheric, temperature or meteorological, magnetic and ozone theories), yet quite as easily accommodated to the known phenomena of the distemper, attributes it to the presence of innumerable minute substances endowed with vegetable or with animal life, and developed in immense abundance under specific states of the atmosphere in which they float and by which they are carried hither and thither. Myriads of these animalculæ, or of these vegetable germs, coming in contact with the mucous membranes, and especially with that of the air passages, irritate (it is imagined) those surfaces and exercise a poisonous influence upon the system. Again, that the waters of this globe swarm with living creatures, which, invisible by our unaided eyes, the microscope has taught us. Others, too numerous to be estimated even by that wonder-showing instrument, in all probability exist. We cannot doubt that the gaseous fluid which surrounds this planet equally teems with living atoms. We know that multitudes of insects and of cryptogamous plants, infinite in number with respect to our finite powers of computation, *are* sometimes suddenly hatched or developed in places which were previously free from them. It is easy to conceive that atmospheric infusoria (so to speak) may rapidly congregate, or vivify, in masses sufficient to render deleterious the air we breathe." How near the accepted theory of to-day! Yet how far from it, when he adds: "That which most commends itself to my own acceptance, and which may also be most easily put to the test when the opportunity shall arise, is the ozone hypothesis." He refers to M. Schonbein's theory in a paper on ozone—1851. How fortunate that Pasteur and his followers have not accepted theories "which may also be most easily put to the test when opportunity shall arise." Having diligently sought opportunities, they have put all theories to a crucial test. Graves wrote: "The empire of Reason, extending from the old to the new world, from Europe to the antipodes, has encircled the earth, and she never sets on her dominions; individuals must rest, but the collective intelligence of the species never sleeps." Ancient dream of a grand man! To-day behold Virchow's development of cellular pathology; Pasteur demonstrating that fermentation is "life without air," and demolishing the bastions of the devil—the doctrines of spontaneous generation; foretelling the results of bacterial processes in certain diseases; Devaine proving that a single spore may inoculate an animal; Lowenhœck giving the population of a drop of water at 500,000,000; Cohn telling us that a bacterium in two days "will have multiplied to the incredible number of 281,500,000,000;" Koch, supported by Klebs and others, saying "bacteria do not occur in the blood, or in the tissues of a healthy living body, either of man or the lower animals." What a glorious victory for science! Let not this victory be turned to worse than defeat by much of the false doctrine of evolution. I prefer to believe of Bechamp's isolated microbes from the chalk of the second epoch that "like produces like;" that bacteria or germs attacking or infecting the Athenian army four hundred years before Christ are the same "yesterday, to-day and forever." If these bacteria caused influenza two thousand years ago, the same bacteria do it now. I believe in no other change for them save that which may be caused by change in the medium in which they exist, and that their ancient type is restored always by the restoration of the surroundings of the original type coming from the creator of all things, "both great and small." Dr. Max. Jolles and Prof. Weichselbaum, with others, have more than two years since discovered in the sputa of cases of influenza a new micrococcus, resembling Friedlander's bacillus or the pneumococcus of Fraenkel and Weichselbaum. This micro-organism is extremely small, "an absolute minimum of the indefinitely little." But it can be viewed to-day by microscopes of three thousand diameters, that, as Griffiths says, "if we could view a man under such a lens he would appear from three to four miles in length." Atremba believes the microbe identical with that of simple coryza, and prefers the name of epidemic catarrhal fever." Flint calls the disease under consideration "epidemic bronchitis." I reserve some grippo-toxine problems for the close of this paper.

Briefly, the symptoms of la grippe are: Chills or rigors, soon followed by a tightness or severe headache or marked frontal pain; sensitive or watery eyes; sneezing often ushering in the attack; discharge from the nostrils; hoarseness, cough, and, may be, difficult respiration; frequently severe pains in the limbs and different parts of the body; great muscular debility in influenza; great articular pain in dengue. Symptoms are varied as we meet the catarrhal, gastro-intestinal or nervous forms of la grippe. Temperature more or less elevated, generally, and, in many cases, notably disturbed circulation; pulse often quick and feeble; excessive expectoration and sweating is often seen not caused by treatment; frequently great disturbance of the digestive system, loss of appetite or loathing of food; sweet water from the "old oaken bucket" disgusting or vomited; great depression of spirits and loss of strength. No symptoms more characterstic and none more interesting to me. All powerful all pervading spore, bacteria or grippotoxine; you cause a patient to immortalize himself by crying out: "The first day or two I was afraid I would die; the next day or so I was afraid I wouldn't; the balance of the time I didn't care whether I died or not." In a few days, if no serious complication, gastric, pulmonary or nervous, the patient is convalescent. Great debility, so generally noted, continues with the aged or enfeebled from other cause or disease. As Dr. Rush expresses it, other diseases "put on its livery." The sudden and overwhelming invasion is only equalled by the often sudden and complete disappearance of the epidemic. The prognosis of uncomplicated cases is favorable. In bright, pleasant weather hundreds demand or require no treatment. They "tough it out" or "weather it out," as they term it. Remembering the often extreme debility and interrupted heart's action, together with the emphasis that Flint places on Dr. Gardner's observations (that have been our own), "during the prevalence of influenza other diseases are unusually severe, and the rate of mortality from all diseases is increased," we should treat la grippe with great conservatism, yet promptly, and with an eye to the most frequent complication, to avoid or prevent these, if possible. In the vigorous or otherwise healthful, with strong circulation and no dyspnœa, I have not hesitated to give phenacetin and salol combined, feeling that I am giving an antipyretic, analgesic and antiseptic at once. I have used phenacetin to the exclusion of antipyrine, antifebrine, etc., since I could first get it. When first introduced here, a "corner" was made on it for a short time by a retail drug house of the State in order to secure prescription business. I always watch phenacetin, and never place it in the patient's hands to abuse. Few and small doses, with careful instructions. If feeble, or greatly disturbed circulation, with much pain, morphine and atropine, hypodermically; or, by the stomach, morphine and an alkali—sodium bicarbonate or sodium hyposulphite. For prominent head symptoms, pain and flushed countenance, if the stomach is tolerant, one of the bromides, with or without an opiate, and hot pediluvia. If I wish to avoid phenacetin, having a high and obdurate fever, I have seen beautiful results from full doses of quinine and small doses of salol combined. If the patient is feeble and small, poor, frequent circulation, I give digitalis, strychnia, arsenious preparations, ammonia and stimulants, with careful attention to diet. Nourishing but easily assimilated food at regular intervals. Much food at once, or rich food, frequently increases headache and adds to the fever, which is of a remittent type, with an evening exacerbation. Salicylate of sodium has enjoyed popularity in the gastro-intestinal form of la grippe; the joint idea being fairly carried out in that of salol. Salol has so much carbolic acid in it that its effect on the kidneys must be noticed. Mild aperients are sometimes required in the gastro-intestinal form of la grippe, with one of the best pepsins after food. With care toward intestinal antisepsis, we may use salicylate of bismuth, iodoform or zymocide. For throat or nose irritation, a cocaine gargle or wash. Prof. Laffont's recommendation of preparations of coca, to overcome asthenia and shorten the attack, is meeting with favor. For the cough, an opiate with chloroform, or the anodyne of morphine and bicarbonate of soda, does well. Pneumonic forms of influenza require supportive treatment *ab initio.* It is not amiss in the South or Southwest in any form of pneumonia. Prof. Keene has suggested an excellent food and stimulant if the patient requires both at once, and cannot take chicken jelly, milk-oyster soup or other such nourishment, or such stimulants as mellow whiskey, soft brandy, egg-nogg, milk punch. He directs the whites of two eggs, shaken in a pint bottle with two ounces of lime water; shake vigorously; add half a pint of pure milk and shake thoroughly; then add sugar, nutmeg and port wine to the taste. If the stimulant or spice is not wanted, the other part is palatable, nutritious food. A small quantity, wineglass to small teaspoonful, every two or three hours, rather than more at longer intervals, for reasons given. Artificial digestants are most useful with iron, quinine, strychnia and arsenious preparations to the feeble convalescent. Mellen's food and milk, with or without brandy. They must be nourished. Dr. Delafield is right; they *must* have food. Patients have starved to death on champagne and whiskey. Sir Morell Mackenzie, so lately dead of la grippe, wrote strongly when he said of the disease, there is a "profound impression on the nervous system," a "deterioration of nerve force, prolonged and sometimes permanent." He urged the "stimulating and building up diet and hygienic treatment to ease and assist functional activities."

The complications and sequelæ of la grippe are numerous and varied.

Until this last epidemic I had not seen such frequent tendency to profound or dangerous interuptions of the heart's action, not to be ascribed to change of treatment at my hands. We had, evidently, in portions of our country the nervous form of influenza, of which that elegant gentleman and charming writer and talker Samuel Henry Dickson said: "The number of deaths in the city of London from epidemic cholera was less by a considerable amount than that produced by the next year's invasion of influenza." "Perhaps the most common of human maladies, and may be affirmed to constitute, directly and indirectly, one of the widest outlets of human life." The journals, the public press, both American and European, personal observation and that of associates over our State and country, made familiar the expressions, "heart failure," "heart trouble," "paralysis of the heart" (much used in Louisville, Ky.), in the epidemic just passed. This caused me to write to many of our most prominent American medical men, saying: "I know that epidemics, historically, differ greatly, but can you offer any explanation for the greater frequency of 'heart failure' or 'paralysis of the heart' in this than in the epidemics just preceding?" I am greatly indebted for this intellectual symposium. It will be readily seen that I did not confine my question to the general practitioner. Here is a letter from a most careful reasoner, distinguished teacher and writer:

3900 Spruce Street, Philadelphia, March 9, 1892.

Dr. J. D. Burch, Aurora, Texas.

Dear Sir: In answer to your question, "What reason can you offer for the frequency of heart trouble in the recent epidemic of influenza?" I can only say that the reason is in the essential nature of the disease. It is a pandemic disorder, *i. e.*, it occurs in widely separated regions simultaneously, and must be inferred to arise from some condition or contents of the atmosphere. It assumes a great variety of types, in which it resembles the zymotic diseases generally, but is peculiar in the great variety and dissimilarity of its local manifestations. The only constant phenomenon it presents, whatever the organs which it specially affects may be, is extreme prostration, which bears no direct relation to the other phenomena of the attack. This debility can only be explained by some peculiar affection of the nervous system or of the blood, or both at once. No specific lesion of either has been demonstrated, but it seems to be admitted that a specific micro-organism does exist in the respiratory mucous membrane, in the blood, and perhaps elsewhere. If this view is confirmed it would explain the variety of types presented by influenza, such as the pulmonary, the cerebral, the intestinal, etc., and it would account for the singular persistence of the nervous debility and the irritability of the heart observed in a greater or less degree in all epidemics of the disease, and which in your late epidemic appears to have reached a maximum.

Yours, respectfully, Alfred Stillé.

Here is a letter from a man whose name is familiar across the continent, the president of the American Medical Association:

Boston, Mass., March 8, 1892.

Dear Doctor: Thank you for your letter of inquiry, but I really have no opinion worth quoting as to the cause of the recent epidemics that have swept over both continents. Of its results, few physicians, East or West, North or South, but have been made painfully aware, and of long-continued debilitating consequences.

Yours, sincerely, Henry O. Marcy.

Doubtless before me are worthy students of this well-known teacher:

New Orleans, La., March 5, 1892.

Dr. J. T. Burch, Aurora, Texas.

Dear Sir: I have not been a careful student of la grippe, but I incline strongly to concur with many others who believe the disease to be due to a poison or toxine engendered by a germ; that this poison acts specially on the nervous system, and often markedly so on the vagus, thus affecting both the heart and respiration.

Yours, truly, Stanford E. Chaillé, M. D.

This from an eminent gynæcologist and beautiful writer:

600 MADISON AVENUE, NEW YORK, March 7, 1892.

DEAR DR. BURCH: I am entirely unable to explain the phenomenon of which you ask, unless it be that the nomenclature, "heart failure," has became a fad of late. La grippe has been fatal here only by creating pulmonary sequelæ. Sincerely,

T. GAILLARD THOMAS.

This is from a wonderful diagnostician and able teacher and writer, whose name you all know:

1700 WALNUT ST., PHILADELPHIA, PA., March 8, 1892.

Dr. J. D. Burch, Aurora, Texas.

MY DEAR DOCTOR: In answer to your letter, I think that both in this and in the epidemic of influenza of two years ago, the cardiac symptoms were very common. They depend, in my judgment, upon the depressing influence of the poison itself on the nerve supply of the heart. Yours, very truly, J. M. DA COSTA.

This from an eminent physiologist:

BELLEVUE HOSPITAL MEDICAL COLLEGE,
NEW YORK, March 7, 1892.

Dr. J. D. Burch, Aurora, Texas.

"Heart failure," "paralysis of the heart," and many such expressions, convey to me no very definite ideas; but I have always found cases in which recovery from la grippe was very slow. The question in your letter is very difficult to answer. Yours sincerely, AUSTIN FLINT.

From the University of Virginia, Medical Department, Chair of Practice, this, by the pen of a scholar of highest authority:

Dr. J. D. Burch, Aurora, Texas. March 8, 1892.

MY DEAR DOCTOR: Your letter of the 3d was received Sunday afternoon, but I have been so busy since that I have not had time to reply till now. Your account of the greater frequency of "heart failure" in your section during the present epidemic of la grippe than in the previous epidemics is very striking. I hear that similar observations have been made in Louisville and elsewhere, and I know no cause for it whatever. We have had a different epidemic here. In the winter of 1889–90 I attended 323 cases of la grippe, and it was *far more severe* that year than since. Last year (1890–91) I saw only about 80 cases, and thus far I have seen about 150 during the present epidemic. The death rate here, however, has been small, though the symptoms were often very alarming. I saw a few days ago (in consultation), in another part of the State, a lady about seventy-three years old, whose general health was excellent, who was suddenly taken with a series of quite severe chills, coming on irregularly and followed by high fever and semi-comatose condition. There was not a *suspicion* of malaria in the case, and our view was that she had la grippe. I am glad to say that she is now recovering. I don't know why some epidemics are so much worse than others. I have been giving recently in the early stage, phenacetin, caffeine and atropia, and later on have substituted salol and quinine for the phenacetin, and this treatment has been very satisfactory in my hands. Yours very truly,

William C. Dabney.

Another name, very high authority on nervous diseases, this note:

Washington, D. C., March 6, 1892.

Dear Doctor: I have not had my attention directed to the subject of heart failure in connection with la grippe. I send you, however, a monograph of mine on "Weak Heart," which may prove of some interest to you. Yours sincerely,

William A. Hammond.

From a distinguished writer, teacher and student, needing no introduction, this:

University of Pennsylvania,
Office of the Provost, March 7, 1892.

Dr. J. D. Burch, Aurora, Texas.

Drar Doctor: I wish I had time to answer your interesting question carefully. I do not think there have been as many deaths during the last six months as in a like period in former years of this great epidemic. Both the profession and the public are more aroused to the dangers, and observations are more accurate and frequent. Besides this, I think there is no doubt that the general health and resisting power of the community have been reduced by the long prevalence of the epidemic influence. Moreover, I attribute a good deal to the fact that there has been a serious period of financial depression; many persons have been anxious, overworked and depressed. All this contributes its share toward making them less able to bear an attack of serious acute disease. I think the causes of death you mention are usual expressions for nervous exhaustion affecting one or other nerve centers, as may happen in different cases. Yours truly, William Pepper.

From the father of the American Medical Association, to whom we are all under so many obligations, this letter of thought and warning:

65 Randolph St., Chicago, Ill., March 3, 1892.

Dr. J. D. Burch, Aurora, Texas.

Dear Sir: Your letter is received. All the epidemics of influenza or la grippe of which we have had any accurate history have been characterized by nervous and muscular weakness, often extending through a protracted convalescence and accompanied by marked increased mortality from pneumonia and acute affections of the respiratory organs. The prevalence of the disease during the last three years has been accompanied by the same characteristics, with the addition of greater development of gastric and intestinal irritation and striking impairment of the functions of the vasomotor, cardiac and respiratory nervous systems. Whatever may be the specific cause of the disease (whether bacterial, toxalbumose or meteorological), it plainly has a strongly depressing or paralyzing influence over the nervous centers of animal life, and this quality has been more strikingly manifest this year than at any time before. I think, however, a large part of the cardiac and pulmonary failures and protracted nervous prostrations encountered in the present epidemic have been caused by the almost universal administration of so-called alcoholic stimulants and such antipyretics as salicylates, antipyrine, phenacetin, etc., all of which directly diminish the taking up of oxygen from the air cells of the lungs, and the elimination of carbonic acid, and equally diminish the sensibility of the cerebro-spinal nerve centers. While they reduce the pyrexia, charmingly relieve the pains and restlessness, they are rapidly impairing the functions of the blood corpuscles, and so far paralyzing the vaso-motor nerves as to stealthily invite a fatal pneumonia, pulmonary œdema or cardiac paralysis. I have treated no case of influenza or la grippe during the last three years that terminated fatally, and I have given none of the remedies just named in their treatment. * * * Yours truly, N. S. Davis.

The last letter is from one whose name is familiar as any other given. Stonewall Jackson's surgeon writes as he handles a knife—decisive, clean cut and to the center of the matter:

Richmond, Va., March, 8, 1892.

Dr. J. D. Burch, Aurora, Texas.

Dear Doctor: I wish I could answer your question satisfactorily. In the epidemic of la grippe the tendency was to pneumonia. In this epidemic the tendency is to death by heart failure. In the first the disease seemed to expend itself in catarrhal symptoms. In the present it attacks the nerve centers, spinal cord and brain. To say why, is to go back to the origin of disease. This we cannot do. I am afraid you have got a difficult question to determine. Very truly yours,

Hunter McGuire.

At the close of last year, before the Medical Society of London, Dr. Althaus made for discussion these affirmations: "1. Influenza was an infectious nervous fever, caused by a special poison (grippo-toxine) circulating in the blood and causing congestion of the medulla oblongata. 2. Perfect or imperfect recovery from an attack of influenza was owing to a sufficient or insufficient quantity of an antidote (antigrippo-toxine) being formed in the serum of the patient. 3. Immunity once acquired might be lost again by the disappearance of the antigrippo-toxine from the serum. 4. Grippo-toxine resembled the syphilitic virus in its tendency to attack all parts of the nervous system after the attack was over, but surpassed the syphilitic toxine in virulence and rapidity of action. 5. The three varieties of influenza—nervous, catarrhal and gastric—were not distinguished from one another by any pathological characters, but only by localization of grippo-toxine in different areas of the bulb. 6. The nervous form of la grippe was owing to congestion of the thermolytic, cardiac and other centers in the bulb. 7. The catarrhal form of la grippe was owing to congestion of the nervous mechanisms formed by the nuclei of the fifth pair and the vago-accessory nerves in the bulb. 8. The gastric form of la grippe was owing to congestion of the vomiting center of the bulb, the shock being sometimes transmitted to the splanchnic nerves, which are astomosed with the pneumogastric in the cœliac plexus. 9. There were afebrile cases of influenza, the principal symptoms being intense mental depression, leading sometimes to suicide. 10. Until the antigrippo-toxine should have been isolated, revaccination with animal lymph appeared to be the best preventive."

It is too soon to affirm or deny the theories or hypotheses of pneumotoxine or grippo-toxine. I confidently submit them to distinguished members of this association fond of the microscope and well versed in pathology, chemistry and bacteriology.

I have watched with increasing zeal the splendid work in surgery and medicine accomplished by the younger members of this body. All hail to them!

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LECTURES.

LOCAL AND GENERAL PERITONITIS.[1]

By W. E. B. Davis, M.D., President of the Tri-State Medical Society of Alabama, Georgia and Tennessee; Secretary of the Southern Surgical and Gynecological Association; Fellow of the American Association of Obstetricians and Gynecologists; Honorary Member of New York State Medical Society, etc.

Gentlemen:—The subject I have selected is a very familiar one. So much has been written on it during the past few years that any further contributions would seem supererogatory, but it must be remembered that a large majority of the profession do not regard this disease as do the abdominal surgeons. Those who are opening the abdomen constantly and seeing its diseases as they are, have learned that peritonitis is not a disease distinct, as taught by Bichat, but that it is nearly always due to some well-recognized lesion of the abdominal viscera. A large proportion of the profession, and of those who see these cases first, still regard the disease as a distinct affection, and therefore their treatment is based on this conception of the disease and is usually followed by a fatal issue. Too much praise cannot be given Habershon, who showed so conclusively by his post-mortems in Guy's Hospital, that a cause could nearly always be found for peritonitis,—that there was a perforation of the appendix, a rupture of an abscess, a leakage from a pus-tube, a perforation of the gall-bladder, of the intestine, or a tubercular disease, or some other well-recognized lesion at the bottom of nearly every case of peritonitis. Of course there are certain constitutional affections which predispose to the disease. Diseases of the kidney may cause peritonitis. We may also have a peritonitis as a result of a malignant growth in the abdomen.

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[1] The "Alumni Lectures" for 1892 of the Alumni Association of the College of Physicians and Surgeons, Baltimore.

There has been much confusion over the terms septic and simple peritonitis. Especially has the general physician been confused over the teachings of the surgeon, inasmuch as the surgeon too often fails to differentiate between these two diseases, and fails to teach that they are very different inflammations, due to different causes.

A septic germ may cause a local inflammation which does not go on to pus formation, and on the other hand a simple inflammation, with very slight septic infection, may go on and result in pus formation. We may have salpingitis, due to septic germs passing up through the uterine canal into the tubes, but the germs are in such small number and the tubes in such a healthy condition as to resist suppuration, and there may result inflammation which will simulate a local, simple peritonitis. On the other hand, traumatism to the uterine canal may cause such inflammation that, should there be any septic germs in the tubes from an old inflammation or infection, that this new inflammation of the uterus will result in suppurative inflammation of the tubes. A simple, irritative, non-suppurative inflammation of the peritoneum may result or terminate in a septic peritonitis by producing a *locus resistentiæ minoris* in the peritoneum, or by producing paralysis of the intestinal walls, thus allowing septic germs to pass from the intestine into the general peritoneal cavity. Obstruction of the bowel thus gives rise to a septic peritonitis.

In a simple peritonitis there is thrown out an exudation lymph which offers a splendid nidus for the development of septic germs, and in the presence of a simple inflammation a very few septic germs will cause septic inflammation of a very fatal character.

That there may be no confusion over the terms septic and suppurative peritonitis, as used in this paper, it may be well to state that it is conceived that their etiology is the same, and that every septic peritonitis would become suppurative if time permitted; for both are due to the same microbe. Many cases of septic peritonitis are cut short by the power of the organism to take up the germs and destroy them. In other cases the infection is so profound that death is produced in a few hours from toxæmia, before there has been any collection of fluid in the peritoneal cavity; still others die from hemorrhagic peritonitis in from twelve to forty-eight, or even seventy-two hours, before the fluid has become purulent; but, when life is prolonged till after seventy-two hours, and sometimes after forty-eight, the fluid in the cavity will be purulent.

When quarts and gallons of pus are reported as having been removed from the general peritoneal cavity and recovery followed, I believe that the pus has usually resulted from a local collection which has ruptured into the general cavity, and the operation has been done before sufficient time had elasped for this amount of pus to result from the septic inflammatory process in the general cavity. It is easy to understand how a gallon of pus which has been shut off from the general cavity by inflammatory exudations and adhesions, and which has only recently ruptured into the peritoneal cavity, can be removed and recovery follow; and it is not difficult to comprehend how this condition might be mistaken for acute, general, suppurative peritonitis, with a gallon or a quart of pus as a result in the cavity, as the pus, by its irritating properties will produce an inflammation which would be misleading; but the condition is quite different from what it would be if the pus had been the result of a general inflammation. True, there would be many grave symptoms, but not that extensive local inflammation and fatal toxæmia which would result from a peritonitis which had existed long enough to give rise to so large a quantity of free pus in the cavity.

Pathological and clinical study combined with bacteriological and experimental research has demonstrated conclusively that by the time a general peritonitis has become purulent there have resulted such destructive local effects and so profound a general infection that the condition must be considered fatal.

A suppurative or purulent peritonitis is usually localized; in other words, a septic inflammation that goes on to pus formation is, as a rule, a localized inflammation, and the pus is limited by inflammatory adhesions so as to protect the general cavity from infection. A septic inflammation that involves the general peritoneal cavity will generally produce death before pus has had time to form, and hence septic inflammation, as a rule, must be localized in order for the patient to survive long enough for pus formation. Fortunately the most frequent class of septic peritonitis is the localized purulent form which is due to protective adhesions being established before the rupture of the tubes, a perforation of the appendix the gall bladder or of the bowel, etc.

Furthermore, small quantities of fluids will be shut off by rapid formation of protective adhesions when there have been no preparatory adhesions. However, when gas escapes without preliminary protective adhesions a peritonitis of the gravest form usually results, the gas being so diffusible that it rapidly involves the whole cavity. I have seen cases of death from this form where there was no lymph thrown out from the inflammation.

A few months ago I operated on a man at Collinsville, Ala., who had all the symptoms of approaching death from obstruction of the bowel, and found a long appendix with a small opening which had permitted the passage of gas, and as a result there was a diffused peritonitis without the presence of fluid formation in the cavity. I have also noticed this several times in my experiments on animals.

In recent years much has been learned about the etiology and treatment of this disease from bacteriological, experimental and clinical study. The following points have been pretty well settled by this class of work:

A simple peritonitis may produce death from the extent of the inflammation, which is dependent upon the amount of traumatism or of the chemical irritant, and upon the condition of the peritoneum.

A septic inflammation is always produced by pus germs, either directly or indirectly, and it has been shown that in inflammation produced by pus germs, cultures made from the products of this inflammation would produce a similar inflammation in other animals, while the products of a simple inflammation would not produce cultures capable of causing an inflammation.

The peritoneum in a healthy condition can take up a moderate number of septic germs and destroy them, no peritonitis resulting; while a peritoneum weakened by some antecedent trouble would succumb to the same number of germs and a fatal peritonitis would be developed. The number of germs introduced into the cavity with a chemical irritant which would cause the pouring out of lymph, and cause a fatal peritonitis, without a chemical irritant, would be taken up and destroyed.

Much depends upon the condition of the peritoneum and upon the manner in which germs are admitted into the peritoneal cavity. For this reason many cases died from septic peritonitis when it was the custom to use chemical solutions for irrigating the abdominal cavity.

Where there are sufficient germs to produce a general septic peritonitis, if death results in twenty-four to forty-eight hours, there will be a hemorrhagic inflammation. I have often seen this occur in my experiments on animals. If the animal lives more than three days, there will be a purulent peritonitis. If it dies in twenty-four hours, there will frequently be an intense congestion without much fluid in the cavity, which would show that the infection had been so great that the animal had succumbed early to the poison and shock.

Some of the most rapid forms of infection produce death without a very marked localization, the system being overwhelmed with the septic germs.

A simple inflammation must be very severe in order to produce death. I have seen some very violent simple inflammations recover, and it is just here that the general physician, and also the surgeon, get the treatment of peritonitis confused. The general physician thinks that most cases can be cured by opium and rest, or that all cases that can be cured at all can be cured in this way; while the abdominal surgeon claims, in a general way, that when you get peritonitis you have a disease for the surgeon, and so the confusion goes on, and the patient is the sufferer. What is necessary is to convince the general physician of the nature of the disease, and to show him that the surgeon does not consider that in all cases surgical procedures are necessary, but, above all things, that the disease is a surgical disease, and that a surgeon should be sought as a consultant in these cases, and that he should be called early, and not after the patient is practically dead. It may be said with truth that the surgeon is to blame, in a large measure, for the general physician's failure to properly regard peritonitis. The contributions on this subject have been too general in their tone. In other words, they have generalized too much and particularized too little. They have not distinguished, nor has there apparently been a great effort to draw the line between the cases in which surgery should be resorted to and those cases in which it is not necessary.

It is impossible, in many cases, to determine the nature of the inflammation. I recollect a case in point which I saw at Alice Furnace in Birmingham, Ala., three years ago. The man had been caught between the furnace elevator and the wall of the building and mashed severely and then dropped thirty feet on a stone floor. He had retention of urine and involuntary passage of fæces for the first twelve hours. After that time his bowels would not move, and his legs became very markedly paralyzed. His abdomen became more and more tympanitic until he could scarcely breathe. His pulse on the third and fourth days ran from 135 to 150. It looked as if death was inevitable. By the persistent use of calomel and enemas of salts and glycerine his bowels were finally induced to move several times, and then his symptoms rapidly improved. This was a simple peritonitis due to traumatism, and the patient ran the greatest risk of losing his life. An operation would have been resorted to, but owing to the injury to the spinal cord it was not deemed prudent.

The result in this case shows that it was clearly one of simple peritonitis and that the operation was not necessary.

Frequently large quantities of fluid will be poured out into the peritoneal cavity, as a result of a simple peritonitis, due to a strangulated bowel, the inflammation extending from the seat of obstruction of the general cavity. I have seen large quantities of fluid in the cavity from this condition. I remember to have operated on a young man at North Birmingham for strangulated inguinal hernia, in which I did McBurney's operation, and there was more than a quart of straw-colored fluid in the cavity, the result of a simple inflammation due to strangulation.

Above all things an attempt should be made to, as near as possible, outline the symptoms of the disease and to so classify the different forms, according to etiology and treatment, that the general physician may understand the value of having the assistance of a surgeon. He should also be made to realize that he should not resort to opium or to any remedy that will so mask the symptoms of the disease that the patient will go on and die, feeling comfortable, without a diagnosis having been made.

In a general way, when the physician is called to a case of beginning general peritonitis, where he cannot determine the cause, it is better to purge his patient freely, and if the symptoms are not much improved after free purgation he may conclude that he has a general septic peritonitis; but if they are improved, he may know that the inflammation is either a simple inflammation, a septic inflammation just beginning, or a localized septic inflammation with tympanites. The pain of a localized inflammation will always be ameliorated by free purgation. A woman with a large pus-tube or a pelvic abscess will feel easier after the bowels have been made to move six or more times, and a man with appendicitis with inflammatory lymph thrown out around the head of the colon will feel much better after the same treatment.

Localized inflammations in the abdomen give less pain when the bowels are kept well open, and in those cases where we have tympanites accompanying a localized inflammation of the abdomen, and where it is doubtful whether or not there is present a general peritonitis, purgation relieves the tympanites and enables one to locate the disease, as all the symptoms simulating a general peritonitis will have been relieved by the purgative, and the tenderness will then be confined to the area of the localized inflammation. So, aside from its curative value, the purgative treatment of peritonitis is a most valuable diagnostic measure. It enables us to say whether there is a general or localized inflammation or not, although it is not possible in all cases to say whether or not there is pus. Of course, should we have a general septic peritonitis revealed by the failure of purgation to relieve the inflammation, generally there is then very little hope of relief from surgical procedure, for the inflammation, by that time, will have become so general and so intense and the system so infected that the disease is incurable.

The treatment of peritonitis will depend largely upon its etiology. If a salpingitis be the cause of severe recurring attacks, then the appendages should be removed. If an appendicitis be the cause of frequent attacks of peritonitis, then the appendix should be extirpated; and these are the two most frequent causes of the disease. Should a man have peritonitis we would at once suspect the appendix to be the trouble. In a women we have both to contend with. She also has to suffer from the misconceived treatment of a host of so-called gynecologists who think they see the origin of all her pains on the inside of the uterus,—that a constricted cervix and a misplaced uterus are the only things to be remedied; and in their efforts to correct what is a natural condition they more often produce a major disease. But I would not be understood as saying that the sound has no place in gynecology, that the uterine dilator should never be used, or that the curette is not a valuable instrument, or that Emmet's operation should be abolished, and that electricity is not a valuable therapeutic remedy; for I believe all of them have their places, and that all of them should be used. The abuse of a remedy or of a surgical procedure should never be any argument against its proper use, and because it is a well-known fact that the abuse of minor gynecological operations has been the cause of many pelvic inflammations, with pus-tubes, ovarian abscesses, etc., that is no argument against their proper use. The woman has also to suffer from the misdeeds of her husband. She is thus infected from gonorrhea, and these germs, combined with others of a more infectious nature, give the most severe forms of inflammation.

Puerperal infection, however, is the principal source of pelvic inflammation. Perhaps in the lower classes gonorrhea may play the most important part, but taking all classes, especially those in the higher walks of life, child-bearing and abortion are the most frequent source of this disease.

In the mild cases of pelvic inflammation there may be no need for other than local and constitutional treatment, and just here I will say that I am not in accord with those who believe that where there is any evidence of mild pelvic trouble the uterus should not be entered. I think, frequently, in cases of mild pelvic inflammation, due to endometritis, that the pelvic trouble can be relieved, certainly it can be benefited, by curetting the uterus and draining it. The endometritis which has caused the pelvic trouble, if not relieved, will only serve to increase the salpingitis. However, I would not treat the uterus thus during acute attacks of pelvic inflammation.

Severe recurring attacks of peritonitis, due to the tubes and ovaries, call for the removal of these organs, and nothing short of this will relieve the patient. In every attack the woman runs the risk of a general peritonitis, beside enduring the great suffering and inconvenience caused by these frequent recurrences of inflammation.

There is no division of opinion as to the propriety of removing pus-tubes and ovarian abscesses. It is a settled question that pus should be gotten rid of, but there is considerable doubt by the profession at large of the propriety of removing inflamed tubes and ovaries where there is no pus. It is also a well-known fact to the gynecologist that the operation for the removal of these organs, for the relief of pain where there is no pus, does not give the satisfactory results that we get from removing pus-tubes or from the evacuation of a pelvic abscess, together with the removal of the tubes and ovaries, unless the pain and recurring attacks of inflammation occur at the monthly periods; then by the removal of the ovaries and tubes the monthly flow is stopped and the attacks of inflammation are relieved, together with the pain.

In cases of pelvic peritonitis the pain between the attacks is frequently due to adhesions, and the failure to give relief by an operation is due to the fact that adhesions so often re-form after the operation.

The cellulitis doctrine is a thing of the past. The abdominal surgeon scarcely ever sees a pelvic cellulitis as a primary disease, The cellulitis is usually secondary to disease of the tubes. We sometimes have a cellulitis from puerperal infection, but usually this is accompanied by pelvic peritonitis.

The teachings on puerperal inflammations have been very confusing. An author, in a recent system of obstetrics, still holds to the opinion treatment of "puerperal fever," and hence, with such high authority advocating this treatment, there can be no wonder that a large number of the masses of physicians are willing to follow such instructions—a doctrine which means death to those woman thus afflicted. It is a want of union on the part of teachers that is causing so much harm. The obstetrician who never sees on the inside of the abdomen does not regard the disease as does the abdominal surgeon, who sees the disease as it is, and hence the great variance in the teachings of the two. Puerperal peritonitis should be regarded and treated as septic peritonitis from any other cause. It is due to infection from a septic germ, the same as that of surgical septicemia, and the localized inflammations from this cause require the same treatment. A general puerperal peritonitis will generally prove fatal. It is doubtful whether there are any cases of general puerperal peritonitis—those cases occurring soon after delivery—which are ever cured, for by the time the peritonitis can become general the system has become so infected that surgery can offer no relief. The system is often infected without any local manifestation whatever, and hence no operation could offer relief. I have seen the abdomen opened in a case of this kind in which there was no local manifestation from the sepsis except a moderately enlarged uterus.

Some time ago I was called in consultation in such a case by Dr. Copeland, of Birmingham, to see a woman who had been confined two weeks previously, who had a temperature from 102 to 104, which had begun soon after delivery. No local trouble could be found. The uterus had been curetted, but this gave no relief. I agreed with the docter that we might find something by opening the abdomen, but nothing was found. The woman was suffering from pure septicemia from puerperal infection. I would not advise an operation in a similar case, as puerperal fevers that do not show some local trouble cannot be benefited by an operation.

The cases of peritonitis shortly after delivery, in which an operation has succeeded in curing the patient, have no doubt been cases of ruptured abscesses or pus-tubes which existed before delivery and which were injured during the process of labor. There are many cases of peritonitis—more than we have been led to believe—following delivery, due to this cause; and that brings up the question of the dangers of pregnancy with a pelvic inflammation. Pelvic inflammations are seldom benefited by pregnancy unless they be of a very mild character. Severe inflammations are usually made worse, and it is not an unusual thing, where a woman has suffered very much with localized pain during gestation, that she will have fever after delivery, which is due to an old salpingitis, and should there be pus in the tube, the tube is very liable to be ruptured and the pus emptied into the abdominal cavity, causing a general peritonitis, unless an operation is done very promptly, and it is not usual for the symptoms to be clear enough to warrant the surgeon in operating in time to save life. Perhaps when more attention is given to this particular complication of pregnancy the surgeon may be called in at a time when an operation will be decided on earlier than has been the practice heretofore.

As stated, puerperal inflammations that are amenable to surgical procedures are those that are localized. They are cases that are operated on some weeks after delivery, and not cases of the so-called "puerperal fever," which kills within four to ten days. A peritonitis that does not kill within a week or ten days may be regarded as localized, and such cases always offer a chance for recovery if surgical procedures are adopted. There are many of these cases of large pelvic abscesses with septic infection where the patient is so exhausted that nothing can be done more than to evacuate the pus, wash out the abscess and drain so as to give the patient time to sufficiently recover to have the ovaries and tubes removed, which are the cause of the disease, and which make it impossible for the patient to be entirely well until they are extirpated. It may be said, however, that often after the evacuation of the pus of an abscess the tubes are so much relieved that it does not became necessary to extirpate them, they having been drained through the abscess, just as we sometimes have, I may say frequently have, an appendicitis cured by a perityphlitic abscess. The appendix rupture causes an abscess, the abscess is opened and drained, and the appendix being drained through the abscess, is relieved to that extent that it does not give further trouble.

It should be remembered that puerperal fevers, as pointed out by Charpentier, are of two great classes: one in which nearly all cases die, the other in which nearly all cases get well if properly treated. In the first class are those cases in which the whole system is rapidly infected before there is any local evidence of inflammation, and under the same heading are those in which there is a general peritonitis with general infection. Under the second class may be placed those cases of mild general infection with localized inflammatory troubles. In the last class, where the disease is limited to the pelvis, we have a fertile field for the surgeon, and much good has already been accomplished in this class of cases. My own experience in this line has been very satisfactory. I have operated on cases where the pulse was 135 and seen them recover.

In 1889 I did an operation on Mrs. M., of Green Pond, Ala., for Dr. Pain, six weeks after her delivery, and removed nearly a gallon of stinking pus. When I saw her she was nearly dead. The abscess was opened, washed out and thoroughly drained. It was necessary to support her by rectal alimentation for ten days. Her pulse ran up to 150 to 160 shortly after the operation. She is now entirely well, and has no trouble with her ovaries and tubes.

Recently I operated on a woman, for Dr. Sexton, of Birmingham, Ala., whose pulse was over 130 and who looked to be in almost a dying condition. I removed more than a half-gallon of pus in this case. One half of her abdomen, the left side, was an abscess. She was infected from an abortion. Sho had an uninterrupted recovery and is now entirely well.

After these operations, which may be considered incomplete, we often have to do a more thorough one later for the removal of the diseased tubes and ovaries.

Frequently a fever, from puerperal infection, may continue for weeks where there is no pus formation, and in which an ovary is greatly enlarged and the broad ligament thickened with occlusion of the tube. I have operated on such a case where the tissues were so soft that my ligatures would cut through and it was necessary to take up the vessels and ligate them separately. An ovary in this condition is septic as if it contained pus.

In a large proportion of cases the pains felt in the pelvis following delivery, after or before, are due to adhesions of the omentum, intestine and ovary and tube, and when an operation is made to evacuate pus we will often find, instead of pus, this condition present; but when fever is kept up and the patient's condition shows sepsis, it is wiser to open the abdomen, break up the adhesions and remove the diseased appendages which are keeping up the infection.

In cases of localized inflammation from appendicitis, with pus formation, the abscess should be evacuated, and where the appendix can be easily reached without breaking up adhesions, it should also be removed. Frequent recurring attacks of appendicitis should call for the removal of this organ, as there is no telling what time a general peritonitis may be the result and the patient's life lost.

The pathology of this affection in the early stages has been well taught by early operations. We could never judge of the real condition of the appendix in early disease by post-mortems, but operations in the early stages have demonstrated all of the pathological conditions to be encountered during the progress of the inflammation. As a rule, an inflammation in the ileo-cæcal region is appendicitis. It is intra-peritoneal and a patient's life is always endangered from an attack of this kind. Hence, where there are severe attacks of recurring appendicitis the operation should be decided upon and done either between the attacks, or it should be agreed between the physician and patient that it should be performed at the next attack, so that the patient would still have the benefit of every chance of recovery should the appendix rupture into the cavity, inasmuch as the surgeon would have the opportunity to wash out the abdomen and drain it. I have recommended that the operation be postponed until an attack, from the fact that it is not an easy matter to get a man to submit to an operation when he is free from pain and in comparatively good health; while on the other hand, when he is suffering from another attack of the disease, the dangers of which have been explained to him, it is not difficult to convince him of the importance of being operated on. Should anything happen to the patient after an operation during an attack, the family would regard his death due to the severity of the inflammation and not to the surgical procedure, which is a very important point to the surgeon and to surgery, because it is necessary to keep surgery in as high esteem as possible with the people, in order that as many as possible who need an operation may be willing to accept it before the disease has continued until the patient cannot hope to have the best results from a surgical procedure.

I do not believe that all cases require operation. On the contrary this is not necessary, for many get well without it, and my purpose is to insist on a thorough study of every case so as to be able to say when an operation should be resorted to and when we may wait on the disposition of nature. In other words, there are cases that need no operation, and others that will run the greatest risks without it, and it is necessary to give them such careful study and close attention that the fewest mistakes shall be made. The physician should be thoroughly aroused as to the gravity of every attack of inflammation in this region. He should not be unconcerned because he has seen several cases recover without operation, and heard of others dying from late operations. I say, late operations, for the per cent. of mortality after surgical procedures is very low except in those which have been neglected. It has been well said that it is the early alarm and anxiety on the part of the attending physician that saves the largest number of these cases. Frequently have I had physicians say to me if they had been suspecting a perforation of the appendix or the rupture of an abscess that they would have recognized the condition, but that the patient had often complained and, without a thorough examination, morphine was given and the case not seen again for many hours. If the physician had been on the "lookout" for appendicitis, as one expressed it to me, he would not have made the fatal mistake. I have been called to a number of these cases in which obstruction of the bowel had been diagnosticated, and found that the physician had given the patient hypodermics of morphine to relieve the pain, for two or three days, and then on attempting to get the bowels to act, and having failed, he concluded that he had invagination of the bowels. It is not possible to say positively in every case just what we have and when surgery should be resorted to; still, by giving every suspected case our closest attention, the mortality can be reduced to a marvelously low per cent. I would not be understood as counseling every practitioner to operate. Abdominal surgery is successful just in the ratio that it is practiced by those of experience, and if a physician has not been trained in this work, he should not undertake it unless the circumstances be very exceptional; and hence what I say will be based upon the results of those who have had experience in abdominal operations. Of course there are many cases where the tumor is prominent and the operation is no more formidable than incising a simple abscess, there being no danger of getting into the general peritoneal cavity; but I have seen a number of cases of what seemed to be this form of abscess where an incision would have incised the bowel; hence experience in abdominal work is necessary to give the patient in every instance the best chance. Recently, within one week, I operated on two such cases. One, a boy six years of age, was brought to my office by his father and physician, with the history that he had been suffering for several weeks with his right hip and thigh. He could not extend his thigh. I found quite a pronounced swelling in the right iliac region, and there was every appearance of an abscess which had become attached to the abdominal wall. It looked like a proper case for the Willard-Parker incision. The boy was sent to the Birmingham Private Infirmary and operated on within two hours after I was consulted at my office. The intestine was found in front of the abscess and firmly attached to it. There was no adhesion to the abdominal parietes, and after the abscess was opened and the abdomen flushed the abscess cavity was packed with iodoform gauze. The gauze was left in for three days, which gave abundant time for protective adhesions to form. Had an incision been made down on the abscess it would have been emptied into the abdominal cavity and the intestine would have been cut.

The other case was seen with Dr. Killough, of Huffman, Ala. Four weeks previously the woman had been seized with great pain in the right iliac region, which had been followed by the slow development of a swelling in this region. The swelling extended low down in the pelvis, and could be felt in the vagina. There was some doubt as to whether it was an ovarian abscess or due to the appendix. An incision revealed that it was due to the appendix, and, notwithstanding the long duration of the trouble, there was no attachment to the abdominal wall. The intestine was in front of the tumor, and its serous coat was cut in opening the abscess. After taking stitches in the bowel, the abscess was opened, washed out and packed with gauze. Both patients recovered.

These cases show the importance of being prepared, in all abdominal abscesses, for all the complications and emergencies of a section.

Clinically, we find that inflammations in the cæcal region do not always run the same course. There is a very great variation of symptoms, which can only be explained by studying their origin. We no longer accept the teachings of Bamberger in 1853, and Oppolzer in 1863, who taught that these inflammations originated in the connective tissue posterior to the cæcum, and that perityphlitis meant extra-peritoneal inflammation. Treves, Bardeleben and Luschka, through their dissections, have shown that the cæcum and appendix are entirely covered by the peritoneum, and that one cannot open the cæcum and appendix without opening the general peritoneal cavity.. Fitz, Weir, Bull, McBurney and Wyeth have demonstrated that all these inflammations, with very few exceptions, originate with an inflammation of the appendix vermiformis.

The causes of appendicular inflammation are the extension of a catarrhal inflammation into the appendix, which may close the appendico-cæcal opening and prevent the return of the mucus and other contents into the cæcum. Small fecal masses may enter the appendix, and not being returned, their fluids are absorbed, leaving hard, stone-like substances which act as foreign bodies and cause irritation, inflammation and often ulceration, with perforation or contraction of the caliber of the appendix. These fecal masses are often incrusted with lime salts, and thus the little "fecal calculi" are formed. Extraneous bodies, like little seeds, very rarely enter the appendix and cause inflammation. Intestinal germs doubtless play an important part in the production of this disease. As Gerster has said, where ulcerative processes have led to the formation of permanent cicatricial contraction, the appendicial trouble is apt to persist after the cessation of the causal disorder.

Clinically, as pointed out by Weir, we observe the following types of the inflammation: There may be slight or acute and persistent pain with tenderness in the right iliac region. which is accompanied by some fever, constipation and retching. This is not associated with a tumor, and gradually gives way, the pain on pressure being most marked over the region of the appendix. In another class we may have the patient suffering pain of a variable character, and soon a tender swelling is recognized. There may be but little fever, and but slight general peritoneal symptoms. Perhaps there will be some obstructive symptoms. By the use of laxatives and local applications all of the symptoms slowly disappear. In still another class we may find a patient with all the symptoms of the former, there being no general abdominal pain, only parietal rigidity with a swelling which soon develops into an abscess. In another class the patient may be attacked with very severe pain, which rapidly spreads over the abdomen with marked symptoms of shock, profuse sweating, pallor of the face, quick, thready pulse, etc., but the general peritoneal tenderness remains overtopped by the original pain. As this subsides a tumefaction is formed in the iliac fossa which goes on and forms an abscess. In another class the pain rapidly extends, and the general peritoneal tenderness overtops the local pain, and the patient rapidly dies in from two to five days from general septic peritonitis.

Bearing in mind the symptoms already narrated, and especially the local tenderness on palpation, which is confined to a small area, two inches from the spine of the ilium, on a line with the umbilicus, there can be but little doubt of the existence of an appendicitis. Inflammation in the right ovary can usually be determined by bimanual palpation. If the symptoms begin to improve within twenty-four to forty-eight hours and no tumor appears, it is evident that there is simply a catarrhal inflammation of the appendix; but should there be very intense pain, considerable fever, retching and rapid pulse, which does not improve in thirty-six hours, it is safer to cut down on the appendix and remove it, if is not so attached as to involve great danger in its extirpation. The patient may recover without the operation, but since these severe symptoms so often precede a perforation, which may cause a dangerous abscess or a general peritonitis, it is much safer to give the patient the benefit of an operation the mortality of which is very small, not more than four per cent. Should the symptoms after the first forty-eight hours be accompanied with a swelling in the iliac region, we should be contented to wait from three to five days, when this enlargement will often begin to give way and the patient will go on to recovery, the tumor being due to a sero-fibrinous exudation. Should the symptoms, however, not improve by the fourth or fifth day, pus may confidently be expected and an incision should be made and drainage established. There will be very few alarming symptoms where the appendix has been shut off by adhesions before the perforation and extravasation, and in those cases where the inflammation goes on to local pus formation, without any very marked general peritoneal symptoms, it may be inferred that such adhesions have taken place.

In those cases where swellings can be made out in the region of the appendix, and where there is protracted convalescence extending over two or three weeks, it may be inferred that pus has formed and that the abscess has opened into the bowel. A swelling that continues more than four days in this region will generally contain pus, and hence the danger of drawing favorable conclusions from those cases which have gotten well after a protracted convalescence.

I operated on a man in the Birmingham Hospital of United Charities who had gotten up after a four-weeks attack of this kind. He was taken down again with pain in the right iliac region and high fever. The operation revealed a large opening in the head of the colon, near the base of the appendix, the appendix being destroyed. The pus had been partially drained through this opening, but so slowly and incompletely that the kidneys had become infected from the abscess. After the operation the man lived a week, dying from pyelo-nephritis. At the autopsy pus could be pressed out of both kidneys.

The hypodermic syringe is unreliable for diagnosis. I recall many cases that were not operated on through the failure of the syringe to reveal pus.

These abscesses should be evacuated if possible without entering the general peritoneal cavity, and with but few exceptions this can be done by seeking the place of their attachment to the peritoneal wall. In the ileo-inguinal type there is but little danger opening the general cavity, if ordinary care is exercised. The incision is made parallel with Poupart's ligament and a little to the inner side of the spine of the ilium over the swelling. The tissues are incised layer by layer, and the attachment of the abscess will be recognized by the discoloration and condensation of the deep tissues. This type of abscess is fortunately the most common, and is due, according to some authors, to the frequent location of the appendix in this region. After the abscess has been opened its cavity should be very gently and carefully examined and washed out, and either iodoform gauze or soft drainage tubes introduced.

The anterior, parietal type comes next in frequency, and the tumor is behind the right rectus muscle. It may extend above the navel and beyond the median line. Frequently the induration can be felt extending into the ileo-inguinal region. In operating for this form of the abscess the incision should be made according to the location, and when there is some doubt as to its attachment, it has been recommended to make a very small median incision and with the finger determine the point to make the opening, so as not to get into the general peritoneal cavity. However, I consider this unnecessary. Some abscesses point toward the rectum and should be drained from below. I have seen a number of these cases. Some are bound in by the intestines and have no attachment to the abdominal wall. They should be aspirated, opened, thoroughly cleansed, rubber drainage-tubes introduced and then be packed with iodoform gauze. The gauze can be removed on the third day, and the tube as soon as the discharge becomes serous.

In this connection I will report the case of a young physician who had several attacks of appendicitis and whom I advised against an operation, who finally passed through all the stages of the disease. He read a paper reporting his own case, and predicted that he might at some time have to submit to an operation, which proved true. In July he made a further report of his case to the *Alabama Medical and Surgical Age*, as follows: "Since reading that paper I have been so unfortunate as to have another attack of appendicitis, resulting in an abscess, and so fortunate as to pass successfully through the attack. Ever since March, 1888, I have frequently experienced what I thought was a fresh attack of appendicitis, but have been able to avert it by prompt use of salines. On April 12th, 1891, a dull pain in the region of the appendix was felt, but was disregarded for some time. It grew worse during the day, and resort was had to Epsom salts, but the symptoms grew very much worse, and I was compelled to go to bed. Dr. W. E. B. Davis was summoned. His diagnosis was that of appendicitis, and the saline treatment was continued. At this time my pulse and temperature were above normal. On applying McBurney's test, the pain was more severe at this point on pressure. It grew so excruciating that it was almost beyond endurance. The bowels were frequently purged, but the symptoms grew worse instead of being relieved. Pain still very severe. Temperature about 101 degrees; pulse about 115. Morphine was used to relieve the pain, and during the day—the 13th—my condition grew worse, and on the night of the 13th, while at stool, a very acute and lancinating pain appeared in the iliac region. Chloroform and morphine were resorted to and I passed a comfortable night. After that I was troubled with very little pain for more than a week. Enemata of sweet oil were given and some hard concretions were removed from the colon. Was placed on a pepsin mixture and symptoms closely watched. A daily exacerbation of temperature and most of the symptoms of typhoid fever were present. After about two weeks a constant pain appeared in the region of the appendix. . . . I continued to grow worse, temperature getting higher and pain more severe, extending down into the testicles. There was no tumor anteriorly, but it could be made out by Dr. Davis by rectal examination. He decided to aspirate what he considered a perityphlitic abscess, and if pus was found, to open and drain through the rectum; but if he failed to find pus, it was agreed that abdominal section should be resorted to. On April 28, 1891, under chloroform the sphincter was dilated and aspirating needle inserted into the bulging tumor by Dr. Davis. About a pint of very offensive pus was drawn off. A very decided improvement in my condition was noticed. No after-effects from the anæsthetic; temperature normal; pulse 90. On the third day the old symptoms began to reappear, and on May 3 a second and more thorough operation was performed. The sphincter was again stretched and incision made into the abscess cavity and a drainage tube inserted. A large quantity of pus was again removed. After that the incision was dilated every second or third day and the cavity thoroughly washed out. After about a week this treatment was discontinued and the cavity allowed to heal. A slight accumulation of pus again occurred, and on May 20th the same operation was again performed. Since then the opening has not been allowed to heal. Now, four months after the attack, I have fully recovered, with the exception of the opening, which is kept patent. The question of the advisibility of an abdominal section instead of the rectal operation was considered, but as the pointing was so plain, it was deemed less risky to do the operation that way."

Soon after Dr. Ransom had published this report in the *Alabama Medical and Surgical Age*, which was in July, '91, he was attacked with pain and tenderness in the right iliac region and had fever in the evening from 101 to 102½ degrees. His symptoms continued to grow worse, and on the fourth day he was subjected to abdominal section and his appendix removed, in the presence of Drs. J. D. S. Davis, Whelan, Due, Glass, Whaley, and several others of the Birmingham profession. After due preparation for abdominal section, a longitudinal incision 2½ inches long was made parallel with the outer margin of the rectus, beginning below the level of the umbilicus. The appendix was readily found and there was attached to it the omentum, which was ligated and cut off. The mesentery of the appendix was incised by a double ligature of catgut and divided. Then the appendix was tied close up to the cæcum and removed. The wall of the cæcum was sewed over the stump of the appendix, but I think this was a mistake. I have recommended the Lembert sutures after cutting the appendix off close to the cæcum, but I now think the plan of McBurney of tying off the appendix better, although I formerly preferred the other method. The operation lasted twenty-two minutes. The operation was followed by an abscess in the right iliac fossa, which had to be evacuated thorough the incision. I think suppuration was due to the stitches over the stump of the appendix. The doctor had septic fever before the operation, notwithstanding the appendix was not perforated, which shows that harm may result from an inflamed appendix by the passage of septic germs through its walls. Dr. Ransom is now entirely well.

The abscess should have been incised at the time it was aspirated, as I had expected to do, but after I found so much pus I was inclined to make an abdominal incision and drain from above. Afterward it was finally decided to make the incision through the rectum, inasmuch as it could be easily reached there, and as there was no evidence of its being attached to the abdominal wall.

This case is an exceedingly interesting one, as it presents so many conditions met with in appendicitis.

I will say that in the majority of severe cases of appendicitis, where there are alarming symptoms, it is far better to operate sometimes when it is not necessary than to allow our patients to take too great risks.

Peritonitis from injuries to the intestine, the bladder, the gall-bladder, the kidneys, etc., have no other remedy than surgical procedure. The time has come when all surgeons recognize the importance of opening the abdomen and repairing an injured intestine. The trouble comes in, in this class of injuries, from many surgeons advising delay in operations until after the appearance of symptoms. If a man has been shot in the abdomen, they caution against an operation until there are symptoms of hemorrhage or of peritonitis, which is clearly wrong, as has been shown by many operations and by the experimental work of original investigators. My own experience in this direction would convince any one that to wait for symptoms in cases of gunshot or stab wounds of the abdomen is to wait for death; for by the time that the symptoms, after an injury of this kind, would indicate hemorrhage or a perforation of the bowel, the patient would be so reduced and peritonitis so well established that the operation would be without avail. I can think of no subject at this time that should require the united influence of abdominal surgeons more than this of injuries to abdominal viscera from gunshot wounds, stabs, etc. So long as there is a division of sentiment among the teachers on this subject, so long will the obstructionists in every city and vicinity use their influence to prevent the aggressive surgeons from doing what they conceive to be proper in these cases. Furthermore, in this class of injuries there is generally a trial before the courts, in which the man who did the injury is tried for manslaughter or perhaps murder, and should the patient die after an operation the lawyers generally try to make it appear that the operation was the cause of death and not the injury, which would reduce a case that would otherwise be murder to perhaps one of manslaughter, if it could be proven that the operation was the probable cause of death. With the present status of the teachings in regard to these injuries it is very difficult for a surgeon to come out of the courts uncensured by the community in which he lives, should his patient die after an operation. Many doctors testify who know nothing about these lesions, who have never operated, and who only resort to the literature of those authors who are opposed to early operations in order to condemn the operation.

Dr. Senn's gas-test for detecting an injury to the intestine is not reliable, inasmuch as it does not always reveal a perforation of the bowel; and if it could be depended on to reveal a perforation, there would be no evidence that we did not have a profuse hemorrhage or an injury to some other of the viscera that should be repaired. Should it reveal a perforation we have gained nothing, because we would have to operate any way, and furthermore we would have a distention of the intestines from the gas, which would be difficult to relieve and which would add materially to the dangers of the operation. Should it not reveal an injury, we could not safely leave our patient alone without the risk of his dying from hemorrhage or some other injury to the viscera; hence, regarding his test from every standpoint, it must be concluded that it has done a great deal more harm than it has good, inasmuch as it has prevented operations that would have been done earlier had it not been for the teachings of Dr. Senn that a man should not be operated on without the use of this test. An abdominal section is a comparatively safe procedure, its danger depending entirely upon the injury done its viscera, and in those cases where the cavity has been entered the wiser plan would be to make an exploratory incision. Should no injury be found, the patient will have had the benefit of a diagnosis, the value of which cannot be too highly estimated, although some surgeons seem to ignore the value of a section for this purpose.

The treatment of general septic peritonitis has been referred to several times in this paper and its preventive treatment dealt with, and it may be said that the preventive is the only successful one for this disease. Last year I read a paper on acute general suppurative peritonitis[1] before the Medical Society of the State of New York, in which I took the position that operations could not save these cases. Those who have had much experience with septic peritonitis can appreciate the statement of Hutchison, that "it is almost impossible to exaggerate our conception of the wild-fire rapidity with which inflammation of the serous membranes may extend whenever an adequate cause has been supplied"—the most important fact to remember is the treatment. Experiments on animals and the many cases of peritonitis in the human subject which I have been permitted to see, twelve, fifteen, twenty, thirty-six, forty-eight and seventy-two hours after the inception of the disease, leave no doubt on this point. I will refer briefly to only a few cases.

At the Birmingham Charity Hospital I operated twelve hours after a stab of the abdomen which perforated the bowel in four places. Peritonitis had involved one half of the cavity, the side on which the injury was received. The intestines on this side were very much inflamed and tympanitic.

I remember to have seen a case with my brother, in which he opened the abdomen fifteen hours after the man had been shot. There had been considerable escape of fæces into the cavity and peritonitis was quite extensive.

In 1889 I saw, with Dr. Wyman, at the Charity Hospital, a man who had been shot in the abdomen about twenty-four hours previously. He was moribund and we did not operate. He died four hours after I saw him—twenty-four hours after the injury—and the autopsy revealed a general hemorrhagic peritonitis.

During the same year I assisted Dr. Wilson at the Jefferson County Hospital in an operation for gunshot wound of the abdomen, thirty-eight hours after the injury, and there was a very intense hemorrhagic peritonitis which involved all the abdominal viscera.

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[1] The remarks on general suppurative peritonitis are an abstract of the author's paper read before the Medical Society of the State of New York.

If these cases teach anything it is that delay in the operation in perforating wounds of the intestine will allow a septic peritonitis to develop which cannot be relieved by surgery, and that to wait for symptoms in penetrating wounds of the abdomen is to wait for diffused septic peritonitis—which is death.

I could report many cases of peritonitis from perforation of the bowels or from the emptying of the contents of an abscess into the cavity, or from perforation of the appendix of the gall-bladder, and from other causes, to illustrate its rapid development and fatal termination, but this is not necessary, even though the length of this paper would permit of it, for the experiments of Pawlowsky, Grawitz, Wegner and others who have made acute septic peritonitis the subject of very careful study leave but little to be added in that direction.

In diffuse septic peritonitis there is a double source of infection—the one from the general cavity, and the other from the septic germs which pass through the walls of the intestine, owing to the pathological conditions produced in the tissues of the bowel from the inflammation. Therefore it is not sufficient to remove the source of infection from the cavity, but, if possible, the contents of the intestine, in order to get rid of gas and fluids which contain septic germs, and to relieve the distended, paralyzed guts, which give rise to grave pressure symptoms—symptoms which often resemble obstruction of the bowel from mechanical causes, but which are due to dynamic disturbances.

It is often very difficult to make a diagnosis of general peritonitis, for in the great majority of cases it is a secondary disease and is greatly modified in its symptoms by the original trouble. The symptoms may be almost completely veiled by other grave conditions. The change in symptoms from a perityphlitic abscess, or a puerperal, purulent, pelvic peritonitis, is often not very pronounced. But, of all the difficulties, the free use of opium furnishes the greatest—as all symptoms are masked, and the physician and family led to believe the patient better and the condition not serious.

Of the local symptoms, pain comes first. It is nearly always present, and it is the severe, excruciating pain which first attracts attention. When the pain is local at the beginning, it is of very great diagnostic value as to the cause of the inflammation. Pain, however, is not always present, and I have seen the gravest cases lying comfortable—cases in which the infection was most profound; but where there is present, in connection with pain, rigidity of the abdominal walls, distention of the abdomen and general tenderness, vomiting and eructation of gases, with marked constitutional symptoms—rapid, thready pulse, some elevation of temperature, etc.—there can be but little doubt of the existence of general peritonitis, and if there is no recognizable cause, free purgation will, as a rule, show whether it is simple or septic. I have often seen cases where the diagnosis could not be made with any reasonable degree of certainty because morphine had been given freely, and there was no evidence that the peritonitis was not a simple inflammation or a localized inflammation with tympanites. These cases are so frequent that too much stress cannot be laid on the importance of withholding opium until after a diagnosis has been made. Some time ago I saw a very sad case of this kind in the family of one of our most prominent physicians.

I was sent for thirty-six hours after a girl, eighteen years of age, had been taken with pain in the abdomen, which had been pretty well controlled by morphine. Her pulse was 120, temperature 102–5 degrees, and there was some rigidity of the abdominal muscles with general tenderness. She evidently had peritonitis, but I could not say that it was septic and advised the use of calomel in large doses and enemas of glycerine and salts, and directed the attending physician to let me know in twelve hours the result of the treatment, that an operation might be done if there was not a very marked improvement. I received no message that night, but on the following morning I found a note saying that she had been purged and was better ; this was Wednesday morning. On Thursday morning I received a similar message, but in the evening I was sent for, and found her suffering very great pain, with a temperature of 104 degrees, pulse 140, and in a dying condition. There was no doubt then about the diagnosis, but an operation could not have offered any chance of recovery, and while the half-dozen physicians present urged me to operate, the mother of the girl was opposed to it unless we could offer more hope of saving her. An autopsy could not be had, but the attending physician informed me that a large quantity of pus came out through the undertaker's trocar. On a close examination of the physician on my last visit, I found that the improvement had never been so much as I had been led to believe, and that the tympanites, tenderness, and rigidity of the abdominal muscles had never disappeared. Had I seen the case twelve hours after my first visit, I would have advised an operation. If morphine had been withheld in this case, and calomel and salines given instead, the diagnosis would have been made early and the patient in all probability saved.

In the beginning of a general peritonitis, when the bowels are tympanitic, I begin by giving a tablespoonful of salts in half a glass of water, and direct that the dose be repeated every hour until the patient is freely purged. This treatment is especially indicated in the threatened peritonitis we so often meet after laparotomies. I have seen the symptoms of a beginning peritonitis promptly cut short by the administration of a few doses of salts, or of calomel, in from one to three grain doses, repeated hourly. If purgation does not succeed, we know that an operation is generally indicated. Calomel has to be used oftener than salts, as the stomach will generally reject the salts, but it should always be accompanied with enemas of salts and glycerine.

Mears says: "Surgical interference is not justifiable and should not be instituted in cases of typhoid fever in which perforation occurs when the infective process is at its height. In mild cases of the disease in which the pyrexia has not been of high grade, and in which the perforation occurs at the end of the third week or later, when the stage of convalescence is fully pronounced, laparotomy may be performed." Of the four cases of peritonitis from this cause which I have seen during the past year, not one promised anything by an operation.

Hadra has advocated in diffused septic peritonitis "open treatment, a full exposure of the abdominal cavity, which should be maintained until the danger has passed,—as much of the omentum and of the bowels as find no ready room inside should be left resting on the surface." He claims, by this method, "the cavity would be sufficiently cleansed and kept dry, the bowels to a great extent excluded, the exchange of poisonous materials diminished, the bowels, peritoneum and all the other involved organs relieved of pressure—suction of the peritoneal and diaphragmatic lymph organs would at once be greatly counteracted." He says that the irritation of the dressings over the patient's abdominal organs need not be dreaded, as "we possess in the gutta-percha tissue a nearly ideal non-irritative air and germ-tight material." In the discussion of Dr. Hadra's paper I stated that I would adopt this method in my next case; but, after a thorough study of his operation, I was convinced that it would not meet the indications for treatment so completely as the plan which I have practiced, and which will allow of the complete exposure of the abdominal cavity, the removal of the cause of inflammation, and assist in restoring the functions of the intestines.

The abdomen should be opened in the median line if the seat of the causative trouble cannot be determined; the cause, if found, removed; the cavity thoroughly douched with hot water; all adhesions broken up, and if tympanites is not marked, a glass drainage tube is introduced. If the cause be found in the region of the cæcum, the drainage tube should be introduced through a second incision in the right iliac region.

In those cases in which tympanites is marked, causing pressure on all the abdominal organs, and thus creating much constitutional trouble, it will require special attention, and upon this point I desire to lay great stress, for this condition is a dangerous one of itself. Not only does the weakened intestinal wall permit of the continued passage of septic germs into the peritoneal cavity, and afford constant infection, but it must be remembered that the bowel cannot be replaced without great pressure and consequent traumatism, which will often kill in a few hours from shock thus induced. In advanced cases of peritonitis it must always be remembered that the walls of the intestines are rendered inactive by inflammation, and the power of contraction cannot be restored until the inflammation is relieved; and hence the bowel will continue tympanitic and exchange of septic germs be kept up unless this condition is remedied. Depaul punctuated the intestine with a fine hollow needle in cases of tympanites with dangerous pressure symptoms, and this has been recommended by many of the leading writers up to this time; even Senn refers to this as a procedure which may be resorted to. This has been tried by me a number of times, and I was never able to see an appreciable decrease in the tympanites, and it is not reasonable to suppose that a paralyzed bowel would expel any quantity of gas through a small needle. I have also practiced making incisions into the bowel after exventration, and by pressure attempted to expel the gas, but this does not prove satisfactory. The best method of relieving a distended, paralyzed gut full of poisonous gas is to fill it with hot water, as this will not only free it of tympanites, but, in getting rid of the gas, fæces, etc., prevents infection. The intestines should not be permitted to escape from the cavity, as their distention will grow greater the longer they are allowed to remain unsupported by the abdominal walls. The tunics being inflamed, the intestines are completely paralyzed, and cannot expel their contents when incised on the outside of the abdomen; and hence this should be done with the bowels on the inside, that they may be compressed by the abdominal walls. From the time the abdomen is opened, a competent assistant should begin to break up adhesions and to direct a strong stream of hot water into all parts of the cavity, while the operator incises the intestine and washes it out. It may be necessary to make more than one opening in the bowel. Before beginning the operation, the stomach should be thoroughly washed and the colon freed from its contents.

In those cases where the symptoms resemble obstruction of the bowel from mechanical causes, after the bowel has been emptied, and, if possible, washed thoroughly, an artificial anus should be formed. The whole procedure can be accomplished in a remarkably short time. The following case will illustrate the treatment:

I operated on a young man five days after a perforation of the appendix. His physician had tried to relieve him with opium and poultices for four days, and then diagnosticated the case to be obstruction of the bowel from invagination. When I was called the physician had begun to use purgatives and enemas, and thought that there was hope of relieving the obstruction by medicine, as the man had passed a very small quantity of fæces that day. I expressed the opinion that it was a case of suppurative peritonitis, which would kill with or without operation.

As the young man begged for the slightest chance an operation would promise, I opened the abdomen, incised the intestine, and allowed the escape of a large quantity of very offensive fluid and gas. At the same time the abdominal cavity was freed from a purulent fluid by hot water, which was directed in every portion of the cavity. The incised gut was stitched to the lower angle of the abdominal wound and a drainage tube introduced through the upper angle. The artificial anus was made in the median line, that the recti muscles might aid in retaining the contents of the intestine. The patient lived until the next day.

There is often an obstruction in the ileo-cæcal region from adhesions produced by the inflammatory process which has caused the peritonitis, and in such a case I have done an anastomosis by uniting the lower part of the ileum with the ascending colon.

In 1889 I adopted this plan in a case of suppurative peritonitis due to the rupture of a perityphlitic abscess, in which there was a compound flexion of the ileum in the ileo-cæcal region from very strong adhesions. The peritonitis was well developed and the tympanites was very great. After the abdominal cavity was thoroughly irrigated and the bowel emptied of its contents, as the patient was holding up well, to avoid the necessity of resorting to the formation of an artificial anus I requested my brother to do an anastomosis with his catgut mats. The ileum was united with the ascending colon in a very few minutes. Three hours after the operation the patient had a small fæcal action and passed a large quantity of gas. He lived fourteen hours after the operation. I would not now recommend this procedure in similar cases, but would make an artificial anus.

In a paper read before the Alabama Medical Association two years ago, in addition to the plan of operating suggested here, I recommended that in some cases where the artificial anus was resorted to the ileum should be flexed and an anastomosis done eight or ten inches from the seat of the proposed anus, so that when it became necessary to close the artificial anus this could be done, after the anastomosis, without interfering with the flow of the intestinal contents. Since I read that paper, more extended experiments with the operation have taught me that in the cases which it would be indicated the patient's condition would not permit of the extra time required for its performance, and hence it is now my opinion that it will never be indicated. In fact, operations for this form of peritonitis are very questionable, as they offer so little hope of recovery.

WHAT CAN BE DONE FOR INCIPIENT CATARACT.

By Edward Jackson, M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic, Surgeon to Wills Eye Hospital.

Gentlemen:—To one case of cataract that requires an operation you will see ten that do not; so that in the total management of cataract cases the other matters are really of much greater importance, and the operative treatment of relatively less importance, than you might be inclined to think from what is said or written about them. I hope that for your own sakes, for the sake of our profession and for the sake of your patients, you will not fall into the too common error of leaving your cataract patients to time and their own dismal forebodings until the possible time for an operation. If the medical profession refused to treat all maladies that it could not radically cure, both its present usefulness and its future chance of development would be greatly narrowed. There is really no justification for making cataract an exception to the rule that the physician should do all he can for his patient though radical cure be not possible.

Diagnosis, accurate and complete as circumstances allow, is the first service to be rendered. Do not let the patient suppose he is suffering from cataract when no cataract is present. Do not let the word "cataract" have to bear the odium of other and incurable diseases. Before the introduction of the ophthalmoscope the diagnosis of cataract was fraught with difficulties and uncertainties that baffled the most skilful specialists. And for the practitioner who does not use the ophthalmoscope, the diagnosis of cataract is now as difficult as ever. There are many cases in which you cannot by simple inspection or oblique illumination determine whether there is a lens clear enough to allow full normal vision, or a cataract ready for extraction. With the ophthalmoscope the diagnosis is simple and easy; and every general practitioner of medicine ought to be sufficiently acquainted with the use of the ophthalmoscope to recognize the presence of opacities in the lens or other dioptric media of the eye.

For this purpose you do not require a Harlan's or Risley's or Jackson's ophthalmoscope, or even the old Liebreich instrument. Any mir ror with a slight hole in it, a fragment of looking-glass with a little silvering scratched away, will answer. With this in a darkened room throw the light from a lamp placed behind the patient's head into his eye; having him look not at the mirror but in other directions, to secure partial dilatation of the pupil, or the pupil may be dilated by a drop of cocaine solution placed in the eye from thirty minutes to an hour before. Placing your eye at the sight-hole and a foot or so from the patient's eye, you will see when the light is properly directed, a red glare occupying the area of the pupil, and against this red background any opacity will stand out as a distinct cloud or sharp black line or dot. These appearances can usually be readily and distinctly recognized at the first attempt to use this method of diagnosis; but to get certainty with it, you must become familiar with the normal reflex of the pupil by examining it in several normal eyes, choosing especially persons of different complexions, including negroes in whom the reflex is comparatively feeble and often can scarcely be called red.

When the presence of an opacity is thus recognized, it remains to determine if it is in the lens or elsewhere. To understand how this is done, hold up your two forefingers in a line with your eye, one at arm's length, the other six inches closer. Then holding the fingers still, move your head from side to side, and watch the tips of the fingers, which will appear to move past each other. The finger farthest from the eye will always appear to move in the same direction as your eye moves, while the finger nearer the eye appears to move in the opposite direction. The same kind of relative movement within the eye is what we use to judge of the position of opacities seen by the ophthalmoscope. Here we have the margin of the pupil for a prominent object to which we can refer the movements and positions of other objects. If on moving the head from side to side the black speck caused by an opacity seems to move in the same direction as the observer's eye across the pupil, the opacity is known to be back of the pupil; while if it moves in the opposite direction, it must be in front of the pupil as a foreign body in the cornea. The distance of the opacity back of the pupil can be judged by the rapidity of its apparent motion, which is greater the farther back it is. Then again opacities in the lens are fixed, while those in the vitreous float about to a greater or less extent independently of any movement of the observer's eye. After you have become somewhat accustomed to the appearances of such opacities, their shape will be a great help in deciding if they are located in the lens or not. Of course if the cataract is far enough advanced to entirely shut off the red reflex of the pupil, these appearances of black specks or lines or areas against a red ground is not presented. But the very absence of the reflex from the fundus of the eye reveals the opacity of some of the media, and careful inspection will generally enable you to locate it.

In view of the extreme simplicity and ease of the method of recognizing or excluding the presence of cataract, it seems almost unpardonable that the diagnosis of cataract should be reached when no lens opacity was present. Yet by neglecting this method of observation with the ophthalmoscope mirror, I have known excellent observers in most respects to fall into just that error. But even when lens opacity is present the mere recognition of it may be of little practical use to the patient. Very marked lens opacity may be present and not cause any impairment of vision, and this may continue for years. And if the adjustment of glasses to correct ametropia gives the patient relief from the imperfection of vision, there is no practical importance in the existence of the lens opacity, except as it bears upon prognosis. Again there may be cataract present and the vision may be impaired; but the impairment may be due to atrophy of the optic nerve or choroiditis or detachment of the retina or some other incurable condition; in which case the cataract is again unimportant, because its removal will leave the vision unimproved, and improvement of vision is generally the only thing to be hoped from the extraction of cataract. Hence the simple recognition of the presence of the lens opacity, though essentially the first step in the diagnosis, is only the first step; and for a complete diagnosis all the other pathological conditions present must be recognized and carefully worked out, and the relative importance of each as to the interference with vision determined.

The older works on ophthalmology assigned much space and relative importance to the differential diagnosis of cataract from glaucoma; and while the test with the ophthalmoscopic mirror has greatly simplified the matter, it still remains one of great practical importance. A very large proportion of the cases of glaucoma that one sees have been told by some physician that they were suffering from cataract, and they generally come to the specialist prepared to undergo a cataract extraction for the relief of their blindness. It is no pleasant duty to tell these patients that an operation can now do nothing to restore their sight, although the proper operation done in the earlier stage of their disease might have preserved their vision. Usually, if the case is not painful or inflamed, the mirror test will show the absence of lens opacity, while if there be some opacity of the media with pain or evidence of inflammation, something beside cataract is present, and the expectant plan of management,which though usually not the best is often followed in cataract, is in such a case entirely inappropriate.

Prognosis.—In laying before your patient such an account of his case as he will expect, and you can rightfully give, you must bear in mind that the term cataract carries a whole prognosis in itself; and often to the imperfectly informed or misinformed layman a very incorrect prognosis, the false impression of which it may be difficult or impossible to remove by subsequent explanations. You must remember that in the popular mind not only is the name cataract associated with the years of partial or complete blindness, and the most formidable operation of ophthalmic surgery, and the failures and partial successes that legitimately belong to it, but almost any case of incurable blindness in any elderly person is apt to be known among his friends as "cataract or something like cataract"—"cataract" being the only technical term that they have at command to designate a whole group of diseases.

With apprehensive patients, therefore, it is often best not to mention the word cataract unless forced to by some direct question. And even then it is often well to speak of the condition as one that may develop into cataract if the patient lives long enough, or continues to use the eyes excessively, or is in poor health. For most people associate with the term the mature or nearly mature condition, or at least a condition that will certainly pass in the not very distant future into one of complete lens opacity. And with a majority of the cases of incipient cataract that we meet no such increase of the opacity ever does occur. In many cases, however, after explaining the condition present as one of opacity of the crystalline lens and what its probable course and ultimate result will be, it is well to give the patient a clear understanding of the relation of this to cataract as he understands the term.

In prognosis the prudent physician is usually "guarded," that is, non-committal as to the future course of disease, and in cataract there is especial need for caution. There are a few cases in which the opacity begins and steadily increases until in a few weeks or months it has become complete. In a larger class of cases the increase of opacity is tolerably constant but very slow. But in by far the largest class the progress of the case is for a time well marked, then partially or entirely interrupted, and such interruptions may be of any length, from a few days to many years. It is the liability of the process to such interruptions that makes a definite prognosis usually impossible.

Generally cases in which there is diffuse clouding of the lens involving the cortex to any considerable extent are those in which there has been recent rapid progress, which progress may continue or be interrupted for any length of time. Where there is a diffuse and almost uniform clouding confined to the nucleus, the opacity is likely to very slowly increase. Cases in which there are sharply defined opaque lines or masses of opacity in the cortex of the lens, with the intervening lens substance clear, are usually stationary, or nearly so. But these are only the usual, not the certain indications.

The prognosis ought in most cases to be as favorable or hopeful as it truthfully can. To most persons the diagnosis carries unduly gloomy foreboding and dismay. This must be counteracted before the patient can attain a just view of his prospects; and any undue depression is to be especially avoided as it tends to impair the patient's nutrition and so hastens the course of the disease. It may safely be urged that in a large majority of cases of cataract useful vision is retained to the close of life; that in no case does cataract cause entire loss of light perception; that as soon as all useful vision is lost, relief can be sought in operation; that the operation is neither painful or dangerous, and that in nine cases out of ten it will restore useful vision.

Treatment.—The view that for incipient cataract nothing can be done is certainly incorrect. In avoiding and disclaiming the pretensions of charlatans the profession has failed to see all that may be done for the relief of this condition. It is clearly established that a considerable number of cataracts remain stationary, often for many years. The conditions that tend to produce opacity in the lens are certainly to some extent amenable to the therapeutic and hygienic measures at our command. Whether the opacity that has already developed ever tends to diminish is perhaps an open question, but my own belief is that opacities of certain kinds do show that tendency. But in any case, one may, with very good reason, hope to check the process where it is and prevent further deterioration of vision in a considerable proportion of cases, though not in all.

Then again eyes in which cataract is progressing rapidly are usually affected with opacity of the vitreous; or, as urged by Prof. Risley, choroidal irritation or inflammation which are known to be to some extent amenable to treatment. And the removal of these conditions quite often brings about a notable improvement in vision. In the main the treatment is to be directed to improving the choroidal nutrition, since it is through the choroid that the vitreous and lens draw their nutritive supply. The first step in this direction is the avoidance of eye-strain, by use of the proper glasses, and by enforced systematic abstinence from close eye-work as reading. This may involve a radical change in the habits and pursuits of the patient; but with the hope that such a change may prevent the occurrence of cataract, this change may often be made. After the avoidance of eye-strain comes protection of the eyes from exposure to excess of light or heat; and beyond this our dependence must mainly be on what will influence favorably the general nutrition. The cure of dyspepsia is of the first importance. The favoring of increased excretion is needful in a large proportion of old people. Freedom from worry and abundant sleep are valuable in all cases. Close investigation will commonly show that the ocular trouble has appeared and developed during some period of especial ill health. And the special treatment that such a condition requires is an essential part of the treatment for the cataract. As to applications to the eye or manipulations of the eye for the specific removal of cataract, many have been urged and much claimed for them, but none has stood the test of experience in the hands of unprejudiced observers.

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ORIGINAL FRENCH TRANSLATION.

THE PROGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.

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There is a custom, a bad one in my opinion, of dividing the subjects of pulmonary tuberculosis into three classes, according as their lesions are in the first, second or third stage. It is upon this division that is generally based the curability and the treatment of phthisis. I believe that this is a great mistake, and that it is scarcely possible to estimate the curability of phthisis in resting exclusively upon this far too simple division, still adopted in the most recent statistical returns.

Without doubt, it is necessary to take into consideration the extent of the lesions of the lungs and those of other organs; and I may as well say at once that, in estimating the chances of curability, it is necessary to make a primary division between those patients who, owing to the extent of the visceral lesions due to secondary intoxications, their cachectic state, their physical and moral weakness, allow no hope, and those who, presenting better conditions, the opposite if you will, give to the physician some hope of bringing their treatment to a fortunate termination. Assuredly, all subjects of phthisis are to be attended to, the cachectic as well as the non-cachectic, but it is the latter only who are to be taken into consideration when it is a question of estimating the curability. The former can only be alleviated. It is certain, however, that from day to day the cachectic subjects will become less and less numerous, because they will be treated earlier and in a more efficacious manner.

But, admitting this, the following are the grounds upon which I believe the prognosis of curability must rest:

1. The constitutional state of the patient, that is to say the ground upon which the tubercle bacillus has been implanted and developed;
2. The condition of his organs;
3. His moral state;
4. The medium in which he lives and in which he is treated.

In other words, it is necessary to take into consideration the general and organic state of the patient and the medium in which he is found.

Allow me to go into some details upon these different points.

I.—I have placed at the head *the constitutional state* of the patient because it seems to me that, all things being equal otherwise, this is the most important element of success or failure in the prognosis and treatment of pulmonary tuberculosis.

The prognosis varies altogether, according as the patient is born of parents both of whom are arthritic, or the one arthritic and the other lymphatic or tuberculous, or both tuberculous, or syphilitic, or subjects of alcoholism; according as he himself, sound and vigorous at birth, has lived under bad hygienic conditions that have enfeebled his organism for a long time or have only weakened it temporarily, and according as he has contracted phthisis accidentally or after other affections that predispose to it, as syphilis, alcoholism, diabetes or any other cachexia.

The ground upon which the tubercle bacillus germinates and develops is therefore extremely variable; between the patient born of arthritic parents and who has become phthisical only after a miserable existence in insalubrious surroundings deprived of pure air, after a long cohabitation with subjects of phthisis, etc., and the one who, born of tuberculous parents, becomes so himself a short time after his birth, there are numerous intermediary degrees of which each one represents a different degree of gravity of the affection.

In consideration of these primary data, 1 classify the subjects of pulmonary tuberculosis as follows:

Under the most favorable conditions to be cured are:

1st. Patients born of arthritic parents and having only contracted tuberculosis accidentally. The latter then has but little tendency to become generalized or to extend locally;

2d. Patients who, born of arthritic parents, are possessed of a debilitating diathesis, but susceptible of cure, as badly managed syphilis;

3d. Patients born of parents, the one arthritic, the other tuberculous, with no other diathesis. These are types of the *hybrides*, as M. Verneuil has so well designated them;

4th. Patients born of pure tuberculous stock, those whom we would have a right to consider as attacked with hereditary tuberculosis, if the recent works of Vignal, Hutinel, etc., had not powerfully contributed to the overthrow of the doctrine.

5th. Patients attacked with tuberculosis at a time when they have reached the cachectic stage of a grave diathesis: syphilis, diabetes, albuminuria, alcoholism, cancer, etc. According as the patients belong to one or the other of these categories, the disease may advance slowly or rapidly, halt, retrograde or progress without ceasing and terminate more or less rapidly in death. But it may be said that those who belong to the first four classes are curable, with chances of curability growing less and less.

I make special mention of paludism, the pathological relations of which with tuberculosis are not yet well understood. But, according to to what I have seen, I believe that the paludal cachexia in Paris at least, constitutes a good ground of culture for tuberculosis, above all when syphilis is associated with it.

II.—*The state of the organs* should next receive attention. The organs demanding the greatest consideration, in the tuberculous, are, after the lung, the alimentary canal, the heart, the liver and the kidneys.

I omit the pulmonary hepative and renal lesions, the importance of which in estimating the prognosis of phthisis is well known. We know in effect that according to the extent of the pulmonary lesions, according to their stage of ulceration, according as the liver and the kidneys are the steatomatous, amyloid, etc., or as there is any thing which indicates the existence of profound secondary intoxications, the phthisis is more or less grave.

I will mention, however, the influence of hepatic lesions upon the production of pulmonary hemorrhages, an influence which, clearly demonstrated in the opinion of the followers of Prof. Verneuil, has had as a therapeutical result the application of revulsives over the region of the liver, for the purpose of arresting attacks of hæmoptysis in phthisical patients.

The heart, without being directly attacked in tuberculous subjects, none the less exercises also a considerable influence upon the production of hæmoptysis. Some have mentioned, for example, a relation of cause to affect between tachycardia and hæmoptysis, even in patients free from fever. This tachycardia, independent of febrile state in phthisical patients, is one of the phenomena which have most forcibly struck M. Tapret, especially in those patients whom he has treated by inhalations of vapors creosotized under pressure—a method which acts in the most favorable manner upon this symptom. It is important to call attention to it, because the patients who present it are, generally, in pretty bad condition to be cured. It is the index of a state of nervous erythism that not only favors hæmoptysis, but also abundant sweats and excessive elimination of urea, which is a cause of weakness in the patients.

The state of the alimentary canal ought to be watched with the greatest care. A phthisical subject who has preserved the appetite and who eats well, who digests well, without diarrhœa, has the best chance of cure. Therefore alimentation ought in an especial manner to engage the attention of the physician in the treatment of phthisis. It is necessary to vary it in a thousand ways capable of arousing the appetite, to inquire into the tastes of the patient, to produce others, to encourage meals, to multiply them without embarrassing the stomach, and finally, in case of necessity, but as a *dernier ressort*, to have recourse to artificial feeding by the sound, when one cannot do otherwise. Sometimes artificial feeding well done, by restoring some strength to the patient, facilitates the return of the appetite and soon permits of natural alimentation. These details in regard to feeding, which are of the greatest importance in the treatment of phthisis, ought not to appear unworthy of the attention of the physician nor of a nature to detract from his dignity. They constitute an important part of the treatment quite as much as the pharmaceutical measures, and the necessity of preserving in good order the functions of the digestive canal requires even that medicaments should yield the precedence to aliments, and it is necessary to try to find for the medicaments some other way of introduction. Hence, the vogue of hypodermic injections and of medicated inhalations.

It goes without saying that the state of the alimentary canal, if it is bad, but without profound alterations, may be ameliorated by an appropriate therapeusis.

III.—*The moral state* of the patient has not, perhaps, attracted the attention of physicians as much as it deserved. Yet its influence upon the curability of phthisis is of the greatest importance. The patient who knowing the gravity of his disease has a firm determination to be cured, is already half cured; a patient who believes himself lost and loses all energy has but few chances of escaping death. There are from this point of view among phthisical patients as many varieties as there are from the standpoint of the constitutional state.

At the present time when the curability of phthisis is admitted by all, when it is known that phthisis is often cured, sometimes even spontaneously, we need not fear to enlighten phthisical patients, endowed with an excellent moral force, upon the nature of their disease and upon the gravity of their condition. They must be told that they are phthsiical, but it must be added that with care they can be cured, and they must be convinced that their cure is in their own hands.

Those who have a good deal of moral courage may be for a moment shocked by this revelation, but they soon overcome the first impression and declare themselves ready to submit to everything you direct. And they will follow your instructions literally, if you know how to secure confidence. It is among these that you will have the largest number of cures. We all know physicians who have recovered under these conditions.

With those who possess little moral force of character, it is necessary to be a little chary of the truth. They lose courage at the very outset and do not recover it; they mourn over their condition, believe that all is lost, have no confidence in anything, and do nothing to help themselves out of their trouble, or at least nothing of importance. There is no great success to be hoped for in this category of patients.

Between the two that I have just taken as types are placed those whom I will call the capricious. These wish very much to be cured, but quickly and at little expense. If the treatment does not show its influence quickly enough to suit their taste, they change physician and treatment, go from one physician to another, declaring that they have done everything to no effect, and in quest of a new mode of treatment which shall soon cure them. There is but little good, likewise, to be expected of these patients.

A phthisical patient who wishes to be cured ought to surrender himself to his physician and not give up to his own ideas and feelings.

The phthisical patient who has the best chance of getting well is therefore he who, the question of origin aside, has no fever, has the alimentary canal, the heart, the liver and the kidneys in good condition, and possesses an excellent moral.

I add that it might be necessary that the patient, in order to be protected from every cause of moral depression, should be able to retire from the world for a few years, that his living should be assured, and that he should have only to concern himself about his cure, without being preoccupied with the gravity of his state of health; to give himself up to diversions, to an easy, light occupation, and to live according to his fancy, or rather to that of his physician, under the conditions of his surroundings that we are going to indicate.

IV.—To say that the subjects of phthisis must be made to breathe a pure air seems to-day to the physician almost a hackneyed expression, especially since the articles of MM. Nicaise, Daremberg, Sabourin, Dulrandy, etc., and the communication of M. Verneuil to the Congress for the Discussion of Tuberculosis. But if emigration from the city to the country, or to the sea, or to the mountains, as the case may be, is a necessity from our point of view, how many difficulties are there in the way of persuading patients to accept it, and above all, their families. To go to the country, or to the seashore, for fashionable people, is to go there to spend two or three months in the year, during the summer if it is in a cold or temperate region, during winter if it is in the South. But this is a serious mistake. It is not two or three months, but two or three years, and even longer, that it is necessary to expatriate oneself. M. Verneuil has very clearly expressed this, and we should not weary of repeating it: a phthisical patient who desires to get well ought to live constantly in the open air, until the cure is confirmed and after; a phthisical patient who persists in living in the city, or who returns to it before his cure, has so much less chance of being cured as his urban sojourn is the more frequent and more protracted.

But this is not all. Apart from the vast general medium, there is a medium peculiar to each patient, that is to say, his apartment, his bedroom, his surroundings.

The *chamber of the patient* ought to be disposed in such a way as to be capable of easy aeration, so that the air may be easily renewed. No large woolen curtains at the windows or about the bed, no paper on the walls, no carpet on the floor, barely a little piece of packing cloth or a rug, that may be removed every day and subjected to the heat of the oven from time to time; but walls in stucco or whitewashed with lime, a floor well waxed; the windows should be supplied with a spring blind, Persian blinds, or with movable panes of glass, thus allowing free passage during the night to a greater or less quantity of air. The subject of phthisis ought to occupy two contiguous chambers, one of which could be freely aired while he remained in the other. But all these details must be strictly carried out; the respiration of the phthisical patient should be watched, as well as his alimentation, by the physician; this is the secret of the good success obtained in our sanitariums and in certain of our hospitals, where the curative effect of fresh air has been tried in the treatment of phthisis.

The adviser of the patients constitutes still another element which is not wanting in value in the question now occupying our attention. His rôle should by to lift up or to sustain the moral courage of the phthisical patient, another element the extreme importance of which we have demonstrated. Gayety, diversion, freedom from all care, ought to form an integral part of the life of the person affected with phthisis; and we have all seen patients deprived of appetite in a medium of a melancholy nature, recover it and eat in a suitable manner in a society full of heartiness and of gayety. There is perhaps no class of patients so ready to place themselves in unison with their surroundings and to receive impressions therefrom; it is, then, of the utmost importance that these should be comforting and not depressing.

But, be it said in passing, if it is well to avoid moral depression, it is not bad also to avoid physical depression; this is why it is necessary to recommend celibacy to subjects of phthisis (at least until the cure seems evident), abstention from all excess, and, above all, avoidance of pregnancy when the patients are women.

I shall have concluded what I have to say about the medium in which a patient lives when I have added that he must at all cost avoid spitting outside of a spittoon easy to sterilize and to clean. The importance of this precaution, and the means of putting it into practice, have been so much insisted upon on all sides that it suffices here to merely mention it.

V.—I approach now the subject of the *pharmaceutical treatment.* Until some one finds the vaccine matter for the bacillus of Koch, a substance capable of rendering the healthy organism refractory to this bacillus and to rid the diseased organism of it, we will have to content ourselves with the use of such substances as we have at our disposition, and which have shown themselves effective against the famous bacillus, without being injurious to the organism.

The two substances that seem to me the most deserving of our confidence are creosote and iodoform, to which may be added, according to the indications, tannin, arsenic, the sulphurets, the phosphates of soda and of lime, pepsine, etc.

The administration of iodoform is hardly subject to indetermination; it is easily given in cachets containing 5 to 10 centigrammes of the medicine, to be taken at meals, or in pills of 1 centigr. every hour (Semmola).

This is not the case in regard to creosote. Three ways dispute the favor of physicians: the stomachical, the hypodermic and the pulmonary.

The stomachic way still has the greater number of partisans, because it is the more convenient to employ: capsules, pills, butter, oil, and creosoted wine enter in by this route; but this method has the great inconvenience of disturbing the digestive canal and of depriving the patients of the means of nourishing themselves.

For some time past, the rectal mode has been quite freely used, which allows the creosote to be administered in larger doses and without any great inconvenience.

The hypodermic method, a later claimant, does not as yet count any number of adepts, in spite of the successes announced; whether it be creosoted oil, or oil containing guaiacol, iodoform, etc., the injections are painful, have to be repeated daily or even several times a day during long months, and it requires a great experience to be able to perform them without accidents. Besides, it should not be forgotten that one wounds, in making them, a tuberculous subject, and is thus exposed to the risk of causing local or general disturbances which, for having been but rarely reported, supervene perhaps none the less quite frequently. So, it is necessary to avoid every cause of suffering and of worry to phthisical patients, and everything that is a source of nervous exhaustion.

I should feel rather inclined toward the method by inhalation, brought into practice first by M. Tapret, afterward by M. G. Sie. The, results are excellent, the method easy. I say that the method is easy, because, notwithstanding its apparent complication, the apparatus used is quite simple, and may be still more simplified, and because experience has demonstrated that the application which can be made with mathematical exactness is the present time, requires but little surveillance and has neither the inconveniences of the stomachic nor of the hypodermic method; it presents no danger, and more than this it has the advantage of bringing the medicament directly in contact with the pulmonary lesions, of expelling more completely the residual air and of augmenting organic combustion. Besides, it may be sufficient of itself to constitute the treatment, but does not exclude other methods with which it may be associated. But is pressure really necessary? M. Bouchard does not think so, and besides the results have been as good with inhalations without pressure as under pressure. This is a point yet to be determined. Moreover, pressure might be replaced by respiratory exercises, which consist essentially in making full rhythmical inspirations.

At the present time, one may administer creosote to patients by inhalations either in the form of spray, by aid of steam atomizers, or by heating porolytes, a kind of old plaster, moistened with creosote, in quantities prescribed by the physician, small to commence with and increasing progressively up to 3 or 4 grammes in twenty-four hours. This dose may appear excessive, but M. Burlureaux has injected 12 grammes without accident.

I have already spoken of revulsion applied over the hepatic region in order to arrest hæmoptysis. There is another mode of revulsion in use in the treatment of pulmonary tuberculosis. I do not speak of cauterizations with the thermo-cautery, about which I have nothing particular to say, but of those made with caustic potash, of which the older physicians well knew the excellent effects, without, however, giving them a correct interpretation. We are not much further advanced than they in this respect, but perhaps these excellent effects are due to the production of ptomaïnes in the suppurating sore created by the cautery, and their resorption. Who knows whether the combination of these ptomaïnes with those of the tuberculous virus does not have the effect of neutralizing the latter? The recent investigations upon the associations of the microbes of tuberculosis would seem to be of a nature to justify this hypothesis. Who knows whether the good effects of cod liver oil might not be equally due to the presence of an analogous ptomaïne derived from the putrefaction of the livers used in the preparation of this oil? One thing is certain, the same quantity of pure oil taken by a phthisical patient is far from producing the same results.[1] This hypothesis appears to me to be still further confirmed by the good results obtained by aid of subcutaneous injections of cod-liver oil that Dr. Kohos (of Manchester) mentioned to me in the month of August last (see the *Union Médicale* of Dec. 31, 1891), and which have been confirmed since by the M. Dujardén-Beaumetz.

Perhaps the phthisical might be made to inhale other antiseptic substances vaporized in their chamber or in special chambers, particularly the chloroformed water recently recommended by Mr. Desprez (of Saint-Quentin). I mention from memory ozone, recommended by M.M. Desnos, Labbé, Oudin, etc., hydro-fluoric acid, etc.

To sum up, the treatment of the phthisical ought to include, in the present state of science, the ensemble of the following means:

1. A sojourn in a pure medium, in appropriate climatic conditions, combining the useful with the agreeable, that is to say a healthy atmosphere and an entourage capable of maintaining the moral courage of the patient in a good condition.

2. Reconstructive and abundant alimentation, of which fresh meat, far preferable to preserved meat, should constitute the principal part.

The best form is grated meat reduced to a pulp, which can be prepared and seasoned in a thousand ways, mixed in soup with purées of legumes, etc. We can in this way give patients as much as 800 grammes a day.

3. To give creosote either by inhalation as we have said, or by hypodermic injections (creosoted oil, iodoformed oil and guaiacol), or internally, when this is possible, in the average dose of one gramme per day, not in capsules prepared a long time in advance and which have undergone more or less alteration, but according to a formula filled by a good pharmacist and renewed as often as necessary. The physician must be sure of what his patient is taking. Other substances can be added to it, according to circumstances: iodoform, arsenic, tannin, cod-liver oil, etc.

4. Revulsion, according to the case, either near the seat of the pulmonary lesions, or over the hepatic region.

I do not ignore the fact that many features of this mode of treatment are difficult to carry out in families: creosoted inhalations, and even the injections, necessitate a special chamber, and fill the apartment with a disagreeable odor; the alimentation of the patient is expensive; the cleansing of the spittoons repugnant; the diversions often of no effect; if to this is added the residence far from town, far from the supervision of the physician, which is necessary, we are forced to admit that the logical, effective treatment of phthisical patients often becomes impossible, and we are compelled to regret the fact that there does not exist in France, except one recently started, establishments similar to those which have for a long time and successfully been in operation in other countries. And yet the localities in which analogous establishments could be constructed in our country are numerous, and these establishments well managed would be an immense source of revenue to France, which would attract and retain a large number of patients now going to neighboring countries to find a cure for phthisis. It is this sentiment that has given rise to the Sanitorium du Canigou, at Vernet-les-Bains; it is desirable that many other establishments of the same kind, placed at different points of our territory, should soon be constructed. There are many of them for the insane; why do less for those afflicted with phthisis, who are much more numerous and I dare say much more interesting, for the greater part of them are curable and capable of supplying the country with good citizens?

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[1] I have heard these views, as well as the greater part of those summed up in this article, expressed by my friend M. Tapret.

Even if some one should happen some day, which is perhaps still very far off, to find the remedy so much desired—the antidote of the tuberculous virus—these establishments would still preserve their usefulness, for the cure of the phthisical will not be realized *ipso facto*, because any particular substance has been administered to them; however powerful it may be, it will still be necessary for it to have time to act, it will be necessary to allow time to the pulmonary lesions to cicatrize, and to the organism to repair its losses. So all this will still necessitate assiduous attentions, during which it will be necessary that the phthisical patient, then as now, remain in the hands of the physician. Who knows, moreover, how long the vaccination will last and the immunity thus acquired? And will not hygiene always remain the principal element in the treatment of phthisis, the most efficacious modifier of the tuberculous ground?

A word more in regard to the non-phthisical tuberculous, those who are attacked with cold abscesses, osteitis, arthritis, tuberculous adenitis. These without being affected with phthisis are, be it remembered, *candidates for phthisis.* Independently of the local treatment necessitated by their lesion, they must be subjected to a general treatment in which creosote has not perhaps much to do, although the facts cited by M. Burlureaux seem to demonstrate the contrary, but in which all the other elements, fortifying alimentation, internal medication and continual surveillance of the physician, are necessary. The patients of this class enter again, from this point of view, into the preceding class, and should be cared for with the same solicitude. It is for these that are especially adapted the establishments on the seashore which the *Œuvre des hôpitaux Marins* is striving to develop at this moment, with the most praiseworthy perseverance.

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SELECTIONS.

RADICAL SURGERY THE BEST SURGERY IN THE TREATMENT OF EXTENSIVE LACERATED AND CONTUSED WOUNDS OF THE EXTREMITIES FOR THE PREVENTION OF TETANUS.[1]

By Everard Hamilton Richardson, M.D., of Atlanta, Ga.

In this paper the effort will be made to show that, notwithstanding the brilliant results achieved by antiseptic surgery during the past decade and a half, the tendency to establish the doctrine that conservative surgery is the *ultima Thule* in the management of every class of wounds, including severely lacerated and contused wounds of the upper and lower extremities, is a pernicious one, fraught with great danger to the lives of very many of the subjects of this class of injuries.

When old and distinguished surgeons declare with eloquent zeal to medical audiences, composed largely of junior members of the profession, "that in a retrospect of their experience and recounting of the number of limbs sacrificed under old methods of treatment, they would like to dig up some of their sacrificed limbs and try them over again under modern antiseptic surgery," they little dream of the harm to humanity that the promulgation of such teaching is calculated to produce. The fact that Lister has by *asepsis* and *antisepsis* revolutionized surgery and produced marvelous and phenomenal results not dreamed of in the philosophy of surgery, previous to the inspiration of Joseph Lister, has made it very natural for surgeons to err on the side of conservatism, and has awakened a feeling of over-confidence in their ability to save limbs after lacerated and contused wounds; and the effort to save limbs has too often resulted in the loss of life from *traumatic tetanus*.

We do not think it can be gainsaid that the tendency of *antisepic surgery* is to lead its devotees to err on the side of conservatism. In the management of this class of injuries, it is eminently proper for the surgeon to " ponder boldly " and consider " all the woes we see, and worse, the woes we see not."

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[1] Read before the Forty-third Annual Session of the Medical Association of Georgia, in Columbus, April, 1892.

The liability to tetanus after severely lacerated, contused and punctured wounds of the extremities is well known by all surgeons of large experience. Its occurrence after minor lacerated, contused and punctured wounds of these parts is also well known; hence its prevention is the highest duty of the surgeon. Indeed, the great mortality of *traumatic tetanus* is so appalling, and its treatment after development so futile and discouraging, that means for its prevention should challenge the surgeon's supremest effort.

In the face of Sidney Smith's declaration that " there is nothing so unreliable as figures, except facts," let us for a moment consider the mortality of *traumatic tetanus.*

Conner states that, " taking all the traumatic cases of tetanus together, as met with in military and civil hospitals, the death rate may safely be placed at not less than eighty per cent. Of 1,332 cases reported from the wars of the last thirty years, 1,062 proved fatal." Of 363 cases in the civil war between the States 336 died. " (*Gross.*)

Gowers places the mortality at nearly ninety per cent., saying, " that it is rivaled by few acute diseases and excelled among its congeners only by hydrophobia."

Emphasizing the statement that " a very large proportion of those who are attacked die," in this connection it is interesting to remember that after the first months of infancy " up to five years of age children enjoy almost entire immunity from tetanus."

" In the thirty years of life from ten to forty about three-quarters of the total number of cases occur." Dark-skinned races are more subject to it than any other race; and it occurs, too, vastly more frequently in hot than in temperate or cold climates.

Poland declares " that there is scarcely a well authenticated instance of recovery on record from traumatic tetanus." Gross—the Nestor of American surgery—in commenting upon the prognosis of *traumatic tetanus*, avers that " in the great majority of cases death occurs from the third to the fifth day; and if an instance of recovery is occasionally met with, it only goes to confirm the general law of the mortality of this affection. In an experience of fifty years I have seen but three cases where the patient escaped with his life, and then only after a protracted and painful struggle."

The ultimate causal factor in the production of tetanus cannot as yet be considered as definitely settled. This question is still *sub judice;* but the experiments upon lower animals of Carle and Rattone, and later of Nicolaier and E. O. Shakespeare, render it probable that tetanus is produced by a specific *bacillus*, and to belong, like hydrophobia, to the class of infectious diseases. Further investigation, however, is necessary to establish their views.

But, be this as it may, the relationship of tetanus to lacerated, contused and punctured wounds, and the prevention of its development, alone concerns us in this paper. How to minimize and prevent the occurrence of tetanus after wounds is a subject worthy of the profoundest endeavors and the most assiduous efforts of the medical profession.

In order to accomplish this object in every severely lacerated, contused and punctured wound of the extremities, impairing the integrity of and exposing nerves, tendons, fasciæ, vessels and bone, make no attempt to save a finger, toe or extremity, but place the patient, without delay, under the best hygienic surroundings, and get rid of the offending member by *immediately amputating* above all injured structure. All punctured, lacerated and contused wounds of the extremities, and whenever practicable in any portion of the body, should be laid open, all foreign substances removed, lacerated and contused tissue excised, free drainage established, and convert them into *simple incised wounds*, and treat them antiseptically. Punctured wounds, from blunt instruments, rusty nails, etc., however trivial, should be treated upon these principles. The liability to tetanus after incised wounds is comparatively slight.

“ Tetanus is rare after operations.”—(*Gross.*)

“ Tetanus but rarely occasions death after operations.”—(*Erichsen.*)

Remove every cause calculated to depress the feelings of patients; avoid fatigue; drafts of air, cold and damp, favor the development of tetanus, and should be scrupulously avoided.

In view of the liability to tetanus after this class of injuries, the do-nothing treatment, so often practiced, and the waiting-for-developments plan are reprehensible in the extreme, and cannot be too strongly condemned. The rules enunciated in the management of the class of injuries under consideration should be religiously enforced whenever practicable. A flippant disregard of them can be but the result of the grossest ignorance, or due to a want of a proper estimate of human life. By the proper observance of these rules, coupled with antiseptic surgery, it is no Utopian dream to indulge in the belief that this monster of disease, *traumatic tetanus*, will be banished from the catalogue of diseases, and in the future become one of the curiosities of surgery.

PROCEEDINGS OF SOCIETIES.

DOUBLE OVARIAN CYST, WITH PRESENTATION OF SPECIMEN.

By Dr. E. G. Zinke, before the Obstetrical Society, Cincinnati, O., June 16, 1892.

This is a case which has been of great interest to me from a pathological as well as a clinical point of view. It is an instance in which the physical examination certainly did not even indicate the pathological condition such as was found to exist after the abdomen had been opened. I report the case chiefly because of the lesson it teaches, and principally to demonstrate that the pelvic cavity is at times the site of difficulties unsuspected, though common enough, and, while I do not wish to justify in any way, or defend, the hap-hazard interference with the abdominal cavity of the female, yet this case illustrates clearly that in some instances we cannot get at the real difficulty until an exploratory incision is made.

This patient, æt. 35 years, has been married for ten years and it is said at one time she led an impure life, but subsequently reformed.

Dr. Schwab, who had charge of the case for several months, and who subsequently referred this patient to me, gave the following history: The sole and only symptom was frequent micturition by day as by night. Examination showed the urine was perfectly normal and all the remedies employed for relief failed. Dr. Schwab did examine her repeatedly, but was not able to discover anything particularly wrong with the pelvic organs except, perhaps, a displaced uterus. On my first examination I found the uterus retroverted, a few small nodules on either side of it, and the ovaries themselves could not be distinctly defined. There was some tenderness to the touch. It appeared to be a "*chronic pelvic cellutis.*" The abdomen as flat as a pancake, not especially tender except on deep pressure in hypogastric and inguinal regions. No tumor could be felt. There was, however, a history of previously existing peritonitis following, I think, an attack of gonorrhœa; so that I was led to believe that the bladder trouble was a functional one, perhaps the result of chronic salpingo-ovaritis, displacement of uterus and adhesions. It is not worth while to name the numerous remedies which were given her. They have all failed.

I soon became convinced this woman could not be relieved unless her pelvic trouble was amenable to treatment. At any rate, I determined to open the abdomen to ascertain the real cause of the difficulty and remove or correct the same. She was put in the Trendelenburg position. The peritoneal cavity was easily entered, and as my fingers went down in the pelvic cavity I came in contact with a flabby cyst, which at first I believed was the bladder. I asking the nurse if the bladder had been emptied, she said 'yes.' I then came upon another flaccid cyst. They did not reach above the pelvic brim. The tumor I removed from the right side was about the size of an orange, universally adherent and containing a number of smaller cysts, in other words a multilocular cyst of the ovary. This is the specimen from the left side, much shrunken from the alcohol. This had a very large pedicle. After its removal I found a similar growth of even larger size, and the same character on the right side. Like the former it was universally adherent. Some of the cyst contained dark, some clear, fluid.

Since the operation the bladder symptoms have subsided, and she is now (two weeks after the operation) virtually well. The operation was performed on the 3d of this month.

These tumors were not felt nor suspected prior to the operation. I expected anything but ovarian cyst. After the removal of the tumors, I broke up the adhesions around the womb, lifted it up, but did not stitch it to the abdomen. The wound was closed and a drainage tube inserted and left in for 48 hours. There was considerable oozing. The tube had to be emptied every 30 minutes the first day and after the first day every two hours.

At the meeting of the Obstetrical Society, May 19th, Dr. Rufus B. Hall reported a case of pyosalpinx with abscess of the ovaries, and showed specimens. The patient, aged 31 years, widow with one child 6 years old, was referred to him by Dr. Max Koehler, of this city. The patient had complained of some pelvic pain for more than a year, yet it had not been so severe as to totally disable her from her work of dressmaking. When she applied to the physician a short time before, he recognized the tumor in the pelvis and advised an operation, after a consultation the speaker agreeing with him. She did not consent to the operation for about two months, continuing to go several blocks twice daily from her boarding house to her work. She grew gradually worse and the pain became more severe, so she finally agreed to the operation, which was made April 21st, and the specimens here presented removed. The left tube is as large as the index finger and contains pus, while the ovary was enlarged to the size of a pint cup, a mere shell filled with pus. They were universally adherent, as will be observed. Just as the ligature was being placed the patient vomited, the sac ruptured and the greater portion of the pus was turned out and some of it spilled in the pelvis, which was thoroughly washed out. Enough pus remains so that the specimen is as large as a teacup. The right tube was as large as the left and also contains pus, while the ovary is the size of an orange with pus in it, as will be observed when it is laid open before you. An interesting feature of the case is that the patient could walk and work and apparently suffer so little pain with this large quantity of pus in her pelvis. This patient weighed 165 pounds and had the appearance of perfect health. Her case is reported to-night to emphasize a point on which the profession is not agreed, but without which I am convinced this case would have been lost, and after which she made a rapid and complete recovery. I refer to reopening the abdomen. After the operation everything went well for a few days. The drainage tube was removed 48 hours after the operation; the pulse ranged from 70 to 80 with a temperature from 98.8 to 99.4 until the morning of the fifth day, when the temperature was 101, yet the patient did not complain. The temperature was 101.5 in the evening, with some discomfort in the left side of the pelvis. The symptoms grew worse from this until the morning of the eighth day, when, in spite of large and repeated doses of phenacetine, her temperature was 103.6. The abdomen was reopened and fully a pint of pus evacuated. The cavity was washed out and drained. In three hours the temperature was 100, and but once after that time did it reach that point. She made a rapid recovery. I have reasons to consider it a surgeon's duty to reopen the abdomen after pus cases when similar symptoms to the case reported are presented. It is a procedure I can recommend most heartily from personal experience, and in my judgment it is not so dangerous as generally believed.

SIXTIETH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION—PROCEEDINGS OF THE SECTIONS—CARCINOMA OF THE MAMMA.

By Harold J. Stiles, M.B., F.R.C.S. Edin., Assistant to the Professor of Surgery, University of Edinburgh.

Mr. Stiles prefaced his remarks by demonstrating a series of photographs with the limelight to illustrate the morbid anatomy and histology of carcinoma of the mamma. He was, he said, indebted to the surgical staff of the Edinburgh Royal Infirmary, and of Chalmers Hospital, Edinburgh, for the material for investigation. During the past three years he had examined over a hundred breasts affected with carcinoma. He had to thank Mr. Andrew Pringle for the beautiful photographs he had made of the microscopic preparations. His (Mr. Stiles's) observations led him to the following conclusions:

1. That the cancer in about 90 per cent. of the cases assumed the form of a single, non-encapsulated, clearly defined, but microscopically infiltrating tumor.

2. That although the naked-eye appearance of the tumors varied considerably, their histological structure was essentially the same in all, consisting, that is, of clusters of modified epithelial cells situated in the lymph spaces and lymphatic vessels of a vascular connective tissue stroma.

3. That the epithelial elements of the tumor differed so widely from the epithelial cells of the adjacent and surrounding gland parenchyma that the old term "cancer cells" might with advantage be applied to them. In properly prepared sections the two kinds of cells, when viewed in the same field, might readily be distinguished from one another. The acinous epithelial cell of the resting mammary gland possessed a small spheroidal nucleus with abundance of chromatine uniformly distributed throughout it. The cells were almost invariably unenucleated; mitotic figures were rarely met with, and fragmentation of the nucleus did not occur. The perinuclear substance was small in amount. Swollen and degenerated epithelial cells were not infrequently seen heaped up in the ducts. The nucleus of the cancer cell, on the other hand, was two or three times the size of that of a normal epithelial cell. The chromatine was relatively much less in amount; the nuclear membrane was very distinct, and the whole nucleus presented a distinctly vesicular appearance. Cells undergoing normal, and in some cases abnormal, mitosis were met with abundantly. Multinucleated cells and cells with fragmented nuclei were common, especially in rapidly-growing tumors. The cancer cell might contain one or more leucocytes in its interior and sometimes the whole cell appeared to have been destroyed by leucocytes.

4. That the stroma of the tumor consisted partly of the pre-existing tissue and partly of a newly-formed tissue, the result of an inflammatory connective tissue hyperplasia, which was secondary to the irritation produced by the cancer cells. In the meshes of the stroma were leucocytes more or less numerous.

5. That the cancer cells lay loose in the tissue spaces of the stroma, and were therefore liable to be washed into the lymphatics by the lymph stream. Probably they possessed a certain degree of independent movement.

6. That the duct and intracystic epithelial papillomata which were

sometimes met with in the breast, especially in connection with chronic inflammatory affections, were epithelial hyperplasias, which were secondary to a vascular and connective tissues hyperplasia. Such epithelial hyperplasias were to be distinguished from carcinoma, not only microscopically, but also clinically, since they did not, as far as he was aware, give rise to secondary growths in the lymphatic glands and internal organs.

7. In addition to the primary tumor, which represented the primary focus of disease, secondary cancerous foci made their appearance sooner or later; they were more or less numerous and extensive in different cases. When numerous, extensive and of early origin, they might give rise to a cancerous infiltration of the entire gland, and produce what was termed a "diffuse carcinoma." Carcinoma of the mamma, originating as a cancerous transformation of the entire gland parenchyma, rarely, if ever, occurred.

8. That the secondary cancerous foci, which were found in the extrinsic tissues of the mamma were due to lymphatic dissemination of cancer cells, derived more or less directly from the primary tumor. No spermatic influence was exerted by these cancer cells upon the cells proper to the tissues in which they lay, so that the latter were never transformed into cancer cells.

9. The smaller cancerous foci which were occasionally found in the breast tissue, more or less distant from the main tumor, appeared also, as far as his observations went, to be the result of lymphatic dissemination of pre-existing cancer cells, rather than to arise as independent foci. Cancer originating in the form of multiple foci was as rare in the mamma as it was elsewhere in the body.

10. Those lobules of the parenchyma which were about to be invaded by the cancer were at first the seat of an inflammatory reaction, which might be either acute or chronic. When acute, the lobule was infiltrated with leucocytes. Ultimately the adjacent cancer cells invaded the substance of the lobule, and completed the destruction already begun by the leucocytes. When the reaction was chronic, hyperplasia of the interacinous connective tissue occurred, and gave rise to a certain amount of proliferation of the epithelial cells of the acini, which, however, was not of a cancerous nature.

11. Various conditions of the parenchyma were met with here and there throughout the gland in carcinomatous mammæ. In many instances the parenchyma appeared to be perfectly normal. In others, again, catarrhal changes, plugging of ducts with degenerated products, cystic changes and interstitial inflammation were met with. Many of these changes had been regarded by Heidenhain and others as "precancerous."

Such conditions, however, were far removed from cancer proper, and he (Mr. Stiles) had never succeeded in tracing the further stages of their development into cancer. Moreover, these so-called precancerous conditions were equally well seen in breasts which were free from cancer; for example, in chronic circumscribed mastitis, in diffuse lobular mastitis, and in multiple cystic disease, with and without intracystic and duct papillomata. After inquiring carefully into the clinical histories of all the carcinomata he had examined, Mr. Stiles had not been able to trace any special etiological relationship between mastitis and carcinoma.

12. By the *nitric acid method* he had shown that the gland parenchyma extended much further in all directions than was generally supposed, and that the surgeon frequently fell short of his intention to remove the entire breast. He agreed with Mr. Butlin[1], who had said: "Certainly in the majority of instances there is nothing to lead one to believe that the new growth (recurrence) arises in the outlying lobules of the mammary gland, or in any remains of the parenchyma of the gland." Mr. Stiles's own observations all tended to show that when cancer manifested itself in breast tissue which had been left behind, the disease originated in the majority of cases from pre-existing cancer cells, derived directly or indirectly from the primary tumor, and occupying the lymph spaces or lymphatics of the stroma. In other words, "recurrence" originated in breast tissue which had been left behind in the same way as "recurrence" in the tissues extrinsic to the mamma. It was not difficult, therefore, to understand how partial excisions of the mamma occasionally succeeded, while more radical operations in other cases might fail to prevent recurrence. The principle which should underlie all operations for carcinoma of the mamma should be the complete removal, not only of the tumor and of the breast, but also of as much of the surrounding tissues as was likely to contain the lymphatic spaces and highways along which the malignant elements of the disease had been disseminated. Unfortunately, it was impossible in any given case to say to what extent this might have taken place, and herein lay the difficulty and uncertainty of the operative treatment for carcinoma.

THE MORPHOLOGY OF TUMORS.

By Rubert Boyce, M.B., Assistant Professor of Pathology, University College, London.

Dr. Boyce demonstrated a photographic record of some of the leading types of the epitheliomata in order to show the grounds upon which he was seeking to establish a division of tumors upon a morphological basis.

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[1] The Operative Surgery of Malignant Disease, p. 378.

In the present instance he had selected the skin tumors, having elsewhere expressed his views upon those of the mamma and glands generally. He thanked Dr. Crocker and Messrs. Johnson, Stephen Paget, Walter Spencer, White, and Beadles for abundance of material. Up to date he had examined 250 cases. Recently a great zoologist had expressed the opinion that it might be possible that the neoplasmata belonged to the category of miasmatic diseases. This statement, coming from Metchnikoff, had naturally directed attention to the minute anatomy of the cell. He would, however, chiefly confine his remarks to the various forms assumed by cell aggregates and to the difficulties which presented themselves in accepting the theory of a contagium vivum.

Continuing, he said: It is seventeen years since Thiersch published his work upon skin cancer, and he has this year the satisfaction of finding in the *Festschrift* recently presented to him that his theories have held their own during this period. It is precisely seventeen years, also, since Virchow published in his *Archiv* a description of molluscum contagiosum, and it is only a few months since he had the satisfaction to learn in the *Festschrift* presented to him by his former and present assistants that his description of molluscum contagiosum and of the peculiar bodies found in it remained good. During this period of seventeen years the interest taken in cancer has not ceased. At first the morphology occupied the attention of pathologists; then came a more close examination into the etiology of cancer. Cohnheim looked to a congenital fault, others to irritation, as determining factors in the etiology of cancer. The relationship of " irritation " to neoplasis has increased in prominence. As is well known, psoriasis lingualis, laryngis, nasalis, and præputialis, and the seborrhœa senilis of Richard Volkmann have engaged, and still engage very considerable attention. Schuchard in 1885, Rudolph Volkmann in 1889, and others, have brought together a very considerable number of surface tumors which were preceded by long-standing sources of irritation, such as, for example, obtained in soot sifting, tar and paraffin working, chronic sinuses, and lupoid and syphilitic ulceration. Among other researchers engaged upon these or similar lines may be mentioned Boegehold, Hauser, Heitter, Kuttner, Zenker, Butlin, Posner, Kanthack and Hutchinson.

In the mean time some were stimulated to seek a specific bacillus for cancer. The number of these researchers was not great. One of the first was Wédopil, in 1881, but Scheuerlen obtained most notoriety; he appears to have based his results upon two experiments. It may be mentioned that the priority of Scheuerlen's claim was disputed by Schill and Frière. The simple culture experiments of Ballance and Shattock, and the beautiful monograph of Hauser, appear to have stopped the further search for a specific bacillus, although indeed an account of a specific contagium under another name was published in this country. It is well understood, of course, that pathologists do not deny to bacilli, or to any other parasite, a very important position in the processes known as irritative; take, for example, carcinoma arising in lupus and in syphilis and in distomatosis.

In 1873 Bollinger described a truly enigmatical contagious epithelioma in the hen, and was able to infect healthy hens. He likened the tumors in structure to Virchow's epithelioma contagiosum. Israel, however, in 1892, says that it resembles an ordinary epithelial downgrowth. Bollinger described no contagium vivum. Weisser, in 1888, and Moreau, in 1889, described parasitic bodies in molluscum contagiosum. Then commenced the numerous researches by a group of French observers —Darier, Wickham, Malassez, Albarran, Soudakewitch, etc.—upon coccidia-like bodies in tumors. In the mean time, in Germany and elsewhere, the coccidia question had occupied considerable attention from among others—Pfeiffer, Sjöbring, Thoma, Podysoski, Delépine, and very recently Ruffer, and the numerous others, to whom references will be found in the writings of Strœbe and Steinhaus. Very many of these observers have taken very strong views, just as Scheuerlen has done. On the other hand, histologists, like Thoma hold themselves very reserved. Recently too, Stroebe, Steinhaus, O. Israel, Karg, Eberth, Ribbert, Hauser and Delépine have paid very considerable attention to the nature of these bodies, and I think I may say that they agree with what Virchow said seventeen years ago, and which he has again repeated, namely, that as no previous and no subsequent stages of these bodies can be traced, therefore there is not sufficient evidence as yet in support of their parasitic nature. They term them, in consequence, cell inclosures which may be of endogenous or leucocitic origin. Moreover the majority of these last mentioned observers very strongly go against the idea of a specific contagion. For in truth the difficulties in the way of a theory of a contagium vivum, based upon our present knowledge, are immense. Carcinoma is but a genus of the neoplasmata, the other members of which are the fibrous, fatty, cartilaginous, muscular and other tumors; they merge into the teratomata, giant growths, elephantiasis, etc., of congenital origin. I will attempt to show in the skin tumors that on morphological grounds we may be able in very many cases to decide whether certain neoplasms are of congenital or of acquired origin—whether, in other words, the cancer springs from a "rest," the "fault" or "irregularity" of Cohnheim—and which may be formed at the period when the tissues are undergoing their differentiation; or whether, on the other hand, it springs from adult tissue. In the latter case irritation undoubtedly appears to play a most important part, and numerous causes of this irritation have been admitted or proved, such as parasitism and mechanical irritation; we, however, by no means imply any specificity of virus in this assumption. Rudolph Volkmann, working on other lines, came to the conclusion, from his analysis of epitheliomata of the extremities—one of the largest and best which has ever been made—that those epitheliomata which arose from congenital moles, nævi, etc., though few in number, had to be separated from the very large group which resulted from acquired warts, ulcers, and chronically irritated parts generally. He pointed out that the tumors of irritative origin were practically benign; on the other hand, those which arose in congenital marks were exceptionally infective. The preceding observations must, I think, be taken into account by researchers engaged upon a contagium vivum, as it is obvious that they are a source of difficulty. Whether my own observations will, from the clinical aspect, agree with those of Volkmann I am as yet unprepared to say. Here I may mention that it would be worth the while of the statistician, when he states that cancer is on the increase, to bear in mind the possibility of a division of neoplasms into the congenital and acquired. He would understand that we could have little control over the former, but he would know from history that circumcision appears to have abolished preputial cancer, and improvements in methods of manufacture and of factory hygiene appear to have diminished the form of cancer more particularly associated with the trades.

Cancer, it has been asserted, has every appearance of being due to a living contagium, and undoubtedly cancer may become a terribly infective disease. Further, Novinsky, in 1876, and later Wehr and Hanau, succeeded in inoculating animals, and Hahn and Bergmann the human being. Cancer is, however, an infectious disease which differs from all other known infectious diseases. The secondary foci are grafts of the original focus, which do not confer their malignancy or their infectivity on the tissues around; the metastatic focus of the skin cancer in the liver does not produce, as far as we know, an adenoma of the latter organ. Why, asks Karg, if cancer is infective in the ordinary sense, does not, for instance, œsophageal cancer, when it bursts into the trachea, produce an epithelioma of the trachea? If there is a specific cancer organism like the specific organisms with which we are at present acquainted, then it is obvious enough that there must be one for the squamous epithelium, one for its appendages, one for the liver, and so on. But, it may be argued, there is a symbiosis between the parasite and cancer cell. This is introducing a hypothesis more difficult of comprehension than the theories of Klebs and Schleich. As a matter of fact, the abnormalities of the cancer nucleus have received considerable attention from Hansemann, the pupil of Arnold, and from Klebs, Schleich and others. Hyperchromatosis is sometimes extremely marked. It is therefore not, perhaps, extravagant to assume for the cancer cell a fusion of chromatins comparable to that which takes place in the egg cell. At any rate, the nucleus appears in the vast number of cases to be abnormal.

To return to the bodies found in cancer cells. It is evident that the large proportion of observers describe the same bodies, but unfortunately they have almost all neglected Koch's most important advice, to photograph them. Thus Sjöbring describes a parasite in cancer the life history of which it has been pointed out tallies in a most remarkable manner with that of the plasmodium malariæ. The psorosperm bodies of the French observers are for the most part very large. Boeck has recently figured Darier's parasite in a case of Darier's disease which has very considerable dimensions, but Boeck does not take it for a parasite. Karg takes the precaution to photograph a section of the epithelium in a case of Paget's disease; and in that photograph, Karg says, the bodies described by Wickham can be seen. In my own morphological studies I have paid considerable attention to the cancer cell inclosures. I have, in common with others, found them to be of variable frequency and of very different appearances, but I have found nothing as yet which would lead me to conclude that they were animal, but it may be that they will be proved to be parasitic. I cannot, however, as yet understand, for the reasons above given, how they will be proven, if parasitic, to be specific—that is, basing my opinion on what we know of infective processes. With regard to the presence of animal parasites in cells, I may here point out that I have elsewhere shown that those parasites, like the sarcosporidia, coccidia and trichinæ, which dwell in cells, for the most part excite extremely little cell reaction; but I have also pointed out that these same parasites may, for reasons which we know not, give rise to necrosis or neoplasis.

But with all the above difficulties in the way of the theory of a specific virus for cancer, we have the opinion of Metschnikoff, and both his opinion and that of Malassez—though the latter's evidence appears to have been somewhat shaken—is entitled to the greatest respect. At the same time, I think that those who throw out the hint of a contagium vivum should express themselves more clearly upon the manner of infection.

[Dr. Boyce then showed sixty-five photographs arranged into groups, each group showing peculiarities of its own. The first group showed epitheliomata which were preceded by hyperplastic changes, or increased eleidin, horny or mucoid formation. They were stated to be associated with chronic inflammatory processes, and there was usually a considerable number of leucocytes and lymphocytes. The second group embrace the fibro-epitheliomata, in which the preponderance of a spindle-celled stroma was striking from the commencement; these growths had been called scirrhoid cancers of the skin. The third group embraced what Dr. Boyce believed to be congenital epitheliomata; they were very striking growths, both on account of their stroma and epithelium; they included the branchiogenous carcinomata. The fourth group showed the origin of a very common form of rodent ulcer in sebaceous glands; but what may be regarded as endotheliomatous and hair follicle types were also seen. The fifth group showed hair follicle epitheliomata, commencing with molluscum contagiosum. Under this category he would include a cystic and papillomatous epithelioma found in the lip and penis. Photographs were also shown of the bodies found by Virchow in molluscum contagiosum, by Karg and Wickham in Paget's disease, and one by Dr. Boyce in rodent ulcer.]

Dr. Herbert Snow said that in carcinoma of the mamma there was an insidious affection of the marrow, in which malignant cells gained access to the marrow and flourished there insidiously for a long period, there being no tumor anywhere else. In patients thus afflicted, there was found at the junction of the second costo-sternal articulations a slowly progressive prominence, perfectly painless, which gave the patient no trouble, and which only in a small percentage of cases ever proceeded to a tumor.[1] Dr. Snow showed photographs to illustrate his remarks. He then went on to discuss melanotic cancerous disease, which, he stated, only arose in cells that naturally secreted pigment, and was a pigmentary degeneration of the protoplasm. Of this disease there were two forms: (1) Melanotic cancer of the eyeball, which arose in the connective tissue cells of that body and which was a true sarcoma, not invading the glands by the lymphatic system; and (2) melanotic cancerous disease infecting the integument, arising always in some place where there was a previous abnormal deposit of pigment. These two diseases had been confounded together. Epithelial cells had a particular tendency to mucoid degeneration of the nucleus, and Dr. Snow agreed with Dr. Delépine that the conversion of the nucleus into a mucous fluid was really the phenomenon which had been described as a parasite. Dr. Snow thought that Dr. Ruffer's mistake was in describing cancer cells as mono-nucleated. The normal cell was mono-nucleated, but in a cell which had become malignant there were a very large number of nuclei present.

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[1] See British Medical Journal, July 16th, p. 113, for paper and illustrations.

Dr. Russell said in his paper published in 1890[1] he had brought forward a number of figures, and the problem before his mind was as to the nature of these structures in the cells of carcinoma. He was, of course, familiar with the Continental work on the subject. He believed that he had, in the course of his investigations, found a link of connection between these cellular bodies and bodies outside the cell, which he termed fuchsin bodies. These fuchsin bodies were pronounced by all who saw them to be a sprouting fungus. The title which Dr. Russell gave to his paper, and the work embodied in the paper, were the subject of numerous attacks.

The bodies described were said by some to be products of degeneration. Since that time, however, Dr. Russell and others have found elsewhere bodies which were not to be distinguished from the detached fuchsin bodies. The precise nature of these bodies has never been satisfactorily explained, but they were certainly not the nucleoli of cells. He could say nothing about the connection between these bodies and the intracellular bodies, which were more particularly in question in the present discussion. Unquestionably Dr. Ruffer had, in his admirable and valuable contribution to this discussion, described bodies contained in the cells of carcinoma. No one who had hardened tissues properly could doubt the existence of these bodies in epithelial cells, though it was still doubtful what these bodies were. A great deal might be said for Dr. Ruffer's view, and great weight must be attributed to the opinion of the zoologists who had examined the specimens; but Dr. Russell thought their opinion could not be regarded as final. Certainly processes occurred in the cells of cancer which were unlike the processes in any other morbid tissues with which he was acquainted. In spite of all the attention he had given to the subject, his mind was still open. He believed that the limit of morbid anatomy on this subject had been reached. He had, within the last twelve months, seen no picture of carcinomatous cells with which he was not perfectly familiar. Efforts should, he thought, be made to ascertain the nature of these structures apart from the standard of morbid anatomy.

Dr. Sims Woodhead said that he had long been strongly opposed to the doctrine of specific infection as the cause of cancer. This opinion he had since greatly modified, but he still believed that there must be an essential difference in the specificity from anything at present known, and that certain changes must take place in the condition of the tissues before the causative agency could become active. As regards the specific causal agent, Dr. Woodhead did not understand Metschnikoff to maintain that there was a special organism for the different kinds of cancer, but that he asserted the possibility of there being an organism which would attack epithelium under certain conditions only. It seemed to be generally agreed that certain bodies were found in cancer cells which were not found in other tissues. These were apparently of the nature of protozoa, but so little was known of them that it was impossible to classify them; and, on due consideration, it must be admitted that an open mind must be preserved on the point.

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[1] British Medical Journal, 1890, ii, p. 1356.

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CLINICAL RECORDS.

SPONTANEOUS RUPTURE OF THE SPLEEN IN AGUE.

By John Bowie, M.B. Edin.

T——, aged thirty, a cavalry soldier, a tall, strong, finely built man, came out to Africa in the service of an African traveler toward the end of July, 1889. Some years previously he had served in Egypt and in South Africa, but had never suffered from any illness; he had never had fever, dysentery, diarrhœa or syphilis. Some days after coming up to the hills, on August 7th of the same year, he had a slight attack of fever, which lasted only a few hours. About a fortnight afterward, while on his way to Lake Nyassa, he had another attack of fever lasting only a few hours, a similar attack occurring about eight days afterward. He was nervous about himself and had quite a morbid dread of African fever, so he determined to leave the country and immediately start on his way home, to arrive at Blantyre, in the Shire Highlands, in the last week of September. About a fortnight after his arrival the patient, who had been in excellent health, had a shivering fit and developed an ordinary attack of ague, accompanied by a good deal of vomiting. In the afternoon of the same day I saw him for the first time professionally. He was then suffering from a mild attack of ague, and exhibited no unusual symptoms; the spleen was slightly enlarged on percussion, but could not be felt on palpation; the other organs were normal. The patient was exceedingly anxious about himself and had quite an unusual fear of fever; his face was very pale and his expression of countenance was one of great dread. I reassured him about his condition and left him more comfortable. The following morning he was feeling perfectly well; no fever, pulse good, tongue clean, no pain; the bowels had been moved, and he was up and going about. At 6 P.M. he had another shivering fit, with sickness and vomiting. He at once went to bed and obtained hot-water bottles, blankets, etc. About 7 o'clock, and before the hot stage had begun, he complained to his companion of a severe pain at his heart. His attendants thought little of this pain, putting it down to his well-known dread of fever, and did not send for me till early next morning, nearly twelve hours after the attack had commenced. The attendants told me that the man had passed a very bad night and had had no sleep; he was continually retching, occasionally bringing up a little greenish-yellow fluid; had complained of being cold all night, and had sometimes broken up into a cold perspiration. In addition to the pain, as he said, at his heart, he had felt pain in the region of the kidneys, and had not been able to pass any urine, though expressing a great desire to do so. The bowels had been moved twice, each motion consisting of a little dark-colored fluid. I found the patient lying slightly propped up in bed, with an anxious and frightened expression of countenance; the face was of a dirty gray color and the features looked rather pinched, but not markedly so; the lips were livid and pale, the eyes were clear, not sunken, and the pupils dilated; the tongue was of fairly good color, but very dry, with a thin brown coating toward the back part. The patient complained of intense thirst, and had been drinking tea almost constantly during the night. I could not get the rectal thermometric temperature, but those parts of the body not in contact with the hot-water bottles were cold. The breathing was thoracic, very short and rapid, averaging over forty to the minute. The patient said he suffered from pain in the left and right hypochondriac regions, which had been present all night and had compelled him to lie on his back, any movement to his right or left side increasing the pain, which was also increased on any attempt to take a deep breath. There was no drawing up of the legs, the patient lying with them fully extended and kicking them about nervously. The pulse could be felt but not counted at the wrist, and on listening over the heart the sounds were very faint and indistinct. The abdomen showed no marked distention; on gentle palpation the walls were found tense above the umbilicus, but below it they were soft and could be readily manipulated without causing any pain. Gentle pressure in the left or right hypochondriac region caused expression of pain, the left side being most tender. Percussion could not be satisfactorily performed. There was no dullness over the bladder, but as the patient complained of a great desire to void urine, and of inability to do so, I passed a soft catheter and drew off about an ounce of dark-yellow, slightly turbid urine, which gave a marked precipitate of albumen by the heat and cold nitric acid tests. The patient was quite conscious, his intellect perfectly clear—indeed he seemed to be in a condition of exalted sensibility or "irritable weakness," the slightest touch of a hot-water bottle causing him to cry out; he was nervously restless, continually moving his arms and legs; he knew that he was nervous, as he said that he felt quite hysterical. There was no pain in the head, no singing in the ears, no sighing or yawning respiration. The thirst was most intense. His constant cry was for something to drink. I simply treated the collapse, pain and vomiting, giving him champagne, morphia, hot pack, etc. By a little after eight o'clock the retching stopped and the man said he was much easier, the pain being much relieved, the parts, however, still remaining painful on pressure; he was now able to lie on his right side, but lying on the left side always caused a feeling of great oppression.

Gradually, however, as the morning wore on, the patient became more anæmic-looking, the lips losing their lividity and becoming very pale; the tongue also began to lose its color; the abdomen became slightly more distended though remaining soft below the umbilicus; the pulse gradually lost strength at the wrist and became imperceptible; the thirst became more intense—indeed, I never saw in any one such a condition of thirst; there was hardly half a minute during the whole six hours I was with him in which he did not beg and pray for drink, though I was continually giving him small quantities of water and moistening his mouth and tongue with slices of fresh lemon. The breathing became quicker. About eleven o'clock he complained of great oppression in the chest—the air, he said "would not go down." There was still good muscular power, as he could turn readily on his right side, and all his senses were perfectly clear. He was, of, course, not allowed to lift his head; but about twelve o'clock he said, "I must get up; I will choke if I lie still." He made an attempt to rise, but immediately fell back and gave a gasp; his eyes rolled and there was a convulsive movement of the whole body, it being for a second or two in a condition of marked opisthotonic contraction; grinding of the teeth ensued, both hands made a grasping movement over the pubis, and after lying faintly gasping for about a minute, all was over.

Three hours after death I made an examination of the body. Rigor mortis was well marked in the neck, arms and hands, beginning in the legs. On opening the abdomen there was a gush of about a pint and a half of dark fluid blood; on gently retracting the walls without disturbing the relation of parts, a thick black clot of blood about as large as a cocoanut was seen lying below and to the left of the distended stomach; from this large thick clot there passed a long clot about an inch and a half broad by half an inch thick across the abdomen to the right, ending at the portal fissure of the liver; extending downward from the large clot was a second thin large clot which passed down the left side into the pelvis. The limitation of the clots was very distinct, none being found in any other situation. On removing the large clot, it was found to be in connection with a rent about four inches in length on the anterior external surface of the spleen. On removing the spleen very carefully (there were no adhesions) and examining it the capsule was found to be clearly separated from the parenchyma for a distance of about two inches on either side of the rent. On grasping the edges of the torn capsule and holding up the organ, it had exactly the appearance of a miniature placenta and membrane, the separated capsule forming a shallow membranous bag, at the foot of which, lying flattened out, was the splenic parenchyma. The parenchyma was neither soft nor diffluent, but rather firmer than normal and of a lighter color (probably due to compression by the blood effused between the capsule and the parenchyma). The capsule was tolerably tough and could not be readily torn. On cleaning away all the blood clot and blood from the spleen the organ seemed little if at all larger than a normal one. The stomach was distended with a brownish liquid; the intestines were quite empty and collapsed, lying flattened out like gigantic tapeworms. The left side of the heart was entirely empty of blood and the ventricle markedly contracted along the base of both cusps of the mitral valve; on its auricular surface was a row of small firm granulations, the largest being about the size of a pin's head; no thickening or adhesion of the cusps. The right side of the heart was flaccid, the ventricle empty, and a small, partly discolored clot in the auricle. The kidneys, except for great anæmia and a small cyst at the apex of the right one, appeared perfectly normal.

Remarks.—The special interest in this case seems to me to be the really healthy condition of the patient previously to the fatal rupture. Spontaneous rupture of the spleen is by no means a unique accident, but in almost all the cases in which it has been noted it has occurred either during or following some serious and more or less prolonged blood disease. Also it has been noted in typhus, typhoid and relapsing fevers, cythæmia, etc. All these diseases greatly alter the blood, through it the spleen, the substance of that organ being found in most cases very much softened and sometimes diffluent. In malarial fevers the spleen is very early and also markedly affected, but for its tissue to become degenerated or organically altered a certain quantity of the malarial spleen and a certain space of time are required. Now the patient had only been a little more than two months in Africa altogether, and of that time more than a month was spent on the inland, where there can hardly be said to be any malaria; he came into Africa at the very safest season of the year, had been excellently looked after, and had hardly suffered at all from fever; indeed, the gentleman in whose service he was, and who has seen a good deal of African fever, told me that the very slight attacks of fever which the man had previous to my examining him were so mild that he doubted whether they were attacks of fever or of temper. Although we must never forget the very insidious nature of the malarial poison, and how it may thoroughly undermine the system without giving any gross sign of its action, yet we must bear in mind that this slow poisoning only occurs under special conditions, among which is a somewhat prolonged stay in a markedly malarial district. In persons whose systems have been thus undermined by the poison rupture of the spleen may be readily cause by any trivial accident, such as a slight blow over the spleen or even by a much less strain, as in a case I heard of where a gentleman ruptured his spleen by vigorously stretching himself after his bath. In all these cases, however, the splenic tissue has been greatly altered—the capsule has lost its toughness and elasticity. Dr. Barrallier gives two cases of rupture of the spleen during first attacks of ague. I have not been able to get his original article, but in one of your contemporaries,[1] where it is quoted, mention is made of both spleens being found softened on post-mortem examination. So I presume the patient had been exposed for some time to the poison or had suffered some days from the fever. Although in most books it is said that the rush of blood to the spleen in cases of malarial fever may be so great as to cause rupture of that organ, yet when we consider the many thousands of cases of ague which occur every day and the exceedingly rare occurrence of rupture, I think we may fairly conclude that something more than a mere increased blood pressure is required to burst the very tough and resistent capsule. In most cases this extra factor is found in the degenerated condition of the splenic tissues—a cause, however, which in this case neither the history nor the post-mortem appearances warrant us in accepting. I think an extra factor or predisposing cause might perhaps be found in the utterly depraved condition of the patient's nervous system, as evidenced by the intense anxiety and dread which he showed. Every one knows the evil influence which great mental worry and an emotional condition exert on the bodily functions, and from time immemorial the spleen has been debited with being specially affected by conditions of anxiety and depression. How far this old belief is correct has yet to be ascertained; but the investigations of Botkin of St. Petersburg, who found that depressing emotions caused an increase in the size of the spleen gives some little scientific support to *τὸν σπλῆνα ἐκβάλλειν* of the ancients. From the extensive and very clear separation of the splenic capsule from the parenchyma it would almost seem as if the hæmorrhage has been first subcapsular (though no varicose or distended veins were found in the substance of spleen post-mortem), and that the blood had made room for itself by tearing through the splenic trabeculæ and pressing the parenchyma backward, the blood gradually increasing and finally rupturing the capsule. As I have noted, the patient experienced a distinct relief from the pain about 8 A.M.; the relief was very decided, and he showed it by his movements. It is very improbable that the morphia—which for want of a reliable subcutaneous solution was given in the form of pills—and the champagne could have any effect, as the stomach could hardly have absorbed them. It was just possible the relief experienced was due to the rupture of the capsule relieving the tension of the pent-up blood. This might also explain the fact that when I first saw the patient, ten hours after the rupture, which I date from the first complaint of pain at the heart, the mucous membranes and tongue were more livid than pale. The amount of liquid which the stomach contained was much greater than the amount the patient had received for at least two hours, and as the intestines were absolutely empty it would seem that the stomach had neither been able to absorb the liquid nor to pass it on to the duodenum for several hours before death. The albuminuria drawn off doubtless arose from the damaging of the epithelium of the capillary tufts, which is said to occur whenever a full stream of arterial blood is not kept flowing through them.

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[1] Brit. Med. Jour., vol. *i.* 1891, p. 376.

The symptoms presented an interesting mixture of those of collapse and of hæmorrhage, several of the prominent symptoms of both being wanting and many modified or obscured.

FRACTURE (DISLOCATION) OF SPINE; REDUCTION; TEMPORARY RECOVERY.

By W. Arbuthnot Lane, M.S., F.R.C.S. Eng., Assistant Surgeon to Guy's Hospital and to the Hospital for Sick Children.

W. J——, aged eighteen, was struck in the back by a heavy iron gate, which fell upon him. He was admitted into Guy's Hospital at 1.30 P.M. on June 13th, where he was found to have some deformity of the spine about the tenth and eleventh dorsal vertebræ, between the spinous processes of which a gap of some extent could be felt. He then had apparently complete or nearly complete power over his legs as he lay on his back in bed. By about four o'clock he began to complain of pain in his legs and in the lower part of the abdomen, and when asked to move his legs he did so with much difficulty and but to a slight extent.

It was impossible to say how far his inability to perform any movement was due to a loss of control over the muscles or to a disinclination to make any alteration in the position of the limbs owing to a consequent increase in the pain from which he suffered. Probably both conditions existed. As time went on the hyperæsthesia became more marked, and any movement or noise in the vicinity of the bed exaggerated his pain greatly. This was most obvious below the knees. Sensation was at the same time much modified. For instance, pulling a hair of his leg caused him great pain, though he could not tell what had been done. The reflexes were much exaggerated.

Mr. Golding-Bird saw the patient just after his admission, before any of the above symptoms had developed, and in his absence I saw him at 11.30 P.M. As the symptoms were steadily increasing in severity, I determined to operate at once. A long incision being made and the spinal muscles having been turned aside, it was found that the tenth dorsal vertebra was displaced forward and slightly downward, so that the cord was compressed between the laminæ of the tenth and the body of the eleventh dorsal vertebræ. The displacement was not considerable, so that the cord was apparently squeezed rather than crushed. The interspinous ligament was torn through. As the lower articular processes of the tenth dorsal vertebra lay in front of the upper articular processes of the eleventh dorsal vertebra, the latter were cut away. After great difficulty the tenth dorsal vertebra was dragged back into its normal position. This was effected partly by over-extending the dorsal spine and partly by traction exerted upon the spinous process by lion forceps. As on the removal of this traction the displacement recurred, I passed a stout silk ligature between the spinous processes of the ninth and tenth and the eleventh and twelfth dorsal vertebræ, and by that means tied the tenth and eleventh spinous processes immovably together.

On June 14th the symptoms continued as before the operation. On the 15th they diminished slightly but distinctly. On the 16th the improvement continued, but it was still necessary to give morphia to control the hyperæsthesia. By the 21st the hyperæsthesia had disappeared, and he could move his legs a little, apparently without pain. The silk ligature was then removed. By the 26th he appeared to have recovered complete control over his legs. The spinous processes were in good position over the same transverse plane. The reflexes were then normal. The patient was extremely troublesome and restless throughout, and after the wound had apparently healed firmly it broke down, a portion of a spinous process coming away, when the ligature, being useless, was removed. He kept constantly rolling about, and complete paraplegia soon developed. The spine was then explored, when the vertebræ were found to be displaced laterally upon one another and the cord was completely divided. This unfortunate result was due solely to the extremely troublesome character of the patient, a poor half-starved, half-witted creature, whom it was found impossible to control satisfactorily by any means.

The case is one of much interest, and resembles more or less closely one published by Mr. Golding-Bird last year. It would appear that the symptoms in this case were due to pressure rather than to the presence of hæmorrhage inside the cord. It was evident at the time of the operation that there was no such considerable collection of blood inside the sheath of the dura mater as could produce symptoms of compression, and one was surprised that there was not more paralysis, since the cord appeared to be compressed within narrow limits by the displaced vertebræ.

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SANITARY.

THE RELATIONSHIP OF DISEASES OF THE LOWER ANIMALS TO MAN.[1]

By James Law, F.R.C.V.S., Professor of Veterinary Medicine, Cornell University, Ithaca, N. Y.

A sense of the dangers attendant on the use of animal food appears to have been almost as old as history. The law of Moses distinguishes between the clean and the unclean, the beasts that may be eaten and those that may not. The prohibited animals are, in the main, the purely carnivorous and omnivorous—those that are especially liable to contract contagious and parasitic diseases from the flesh of their victims. In drawing a safe limit, the edible mammals were practically restricted to the ruminants, which are *par excellence* herbivorous. According to this law, however, even the *clean* animals were forbidden, if they died of disease, of strangulation, or with the blood in the carcass. Similarly, among many primitive peoples a dead body is tabooed, and in ancient Greece the priests of Zeus were polluted by touching uncooked meat.

The great sanitary importance of the Mosaic laws for a pastoral people pitching their tents on the open, grassy plains, and living, in a sense, in common with their vast flocks and herds, is manifest without argument. The parasites and contagia that they mutually harbor increase and dominate in exact ratio with the close aggregation of their hosts—human and brute—and the facility of their transmission from one to another. The prohibition falls first on those flesh feeders that are the most likely to reciprocate with man in the maintenance of parasites and infections. Then it denounces the sick as especially dangerous, and finally, that which dies full of blood and is correspondingly liable to early putrefaction. The prohibition of blood was probably ritualistic rather than sanitary in its object, yet we need not ignore the experiments of Signol, who showed that the portal blood of a suffocated horse contained a poison that could be conveyed from horse to horse with fatal results through several successful generations.

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[1] Address before the Alumni of the University of Buffalo.

The simple avoidance of the dead body and of uncooked meat in the case of many early peoples, though showing a similar precautionary tendency, is far less effective than the prohibitions of the Jewish code. We can still observe the good fruits of the latter in the comparative immunity of the Israelite from such diseases as trichinosis, the pork tapeworm and tuberculosis.

These examples of tribal hygienic laws, however well suited to an age in which the knowledge of disease and its causation was but as a glimmering spark, are sadly antiquated and ineffective in the strong electric glare of the nineteenth century; yet even now our hygiene of meats, as applied to our stockyards and markets, is far behind that which the Jews have practiced for over three thousand years.

The Jewish system is a crude measure, feeling as it were in the dark for protection from an imminent danger, and was perhaps as perfect as could be understood by a people with the grade of knowledge possessed by the Jews; but it is capable of making no real discrimination between the dangerous and the harmless—whole genera of wholesome animals are prohibited to avoid the danger of a few of each genus conveying deadly poisons; and the wholesome flesh of the imperfect or injured animal is condemned equally with that which is the subject of a fatal infection. Moreover, some of the most deadly diseases (like anthrax), affecting the blood and spleen only, may still pass as wholesome, because no solid tissue of the body has been observed to be diseased.

With our modern knowledge of the life history of parasites and of the microbes of disease this crude and unintelligent selection and rejection must give place to a true scientific scrutiny; and every available resort, microscopic and otherwise, must be brought into requisition to protect the public from the truly dangerous animal foods.

To illustrate the field that must be covered I shall name a few of the diseases of our meat-producing animals that are communicable to man, and I cannot begin the list better than with

TUBERCULOSIS.—From this terrible scourge the sheep is almost exempt, while cattle, goats, pigs, rabbits and chickens are extraordinarily susceptible. Among many wild animals, also, the proclivity is strong, and thus at every hand man is liable to meet the redoubtable bacillus. The dangers of the disease are the greater that in many cases occurring in man and beast it assumes a chronic course and its victims manifest a fair measure of health, so that their unsuspecting owners apprehend nothing and see no need of disposing of them, and of thus cutting short their career of plague-diffusion. The vitality of the tubercle-bacillus is also very great, so that it survives alike the lapse of time, the wetting, drying freezing and thawing of changing seasons, and even the curing of the meat and the heat of ordinary cooking. Toussaint and others have again and again infected animals with meat that was believed to have been sufficiently cooked for safety. The dried-up expectoration is easily diffused with deadly effect on the air, to be inhaled by man and beast; and though for man perhaps the most common vehicle is the handkerchief, and for the beast the feeding or drinking trough, yet the dust of our streets and stock yards, of our dwellings, stables, passenger and stock cars, is a prolific channel of infection.

Milk is another common medium of infection, and, since the time of Gerlach, has been often used successfully to produce tuberculosis in previously healthy animals. Nor is the local disease in the udder essential to its conveyance through the milk. The tuberculous cow, with a still apparently healthy udder, frequently yields milk which, inoculated in other animals, produces tuberculosis. Irrespective of the escape of the microbe with the milk, however, it is a thousand to one that the tuberculous cow in licking her udder should leave upon it more or less of her infecting expectoration, to be dropped into the milk pail as dust at the next milking. A frequent mode of propagation among pigs must not be overlooked. About abattoirs it is a common practice to feed to pigs the uncooked offal of the slaughtered animals. As in certain districts a considerable proportion of the cattle are tuberculous, this amounts to a systematic infection of the hogs. A few years ago, at a large public institution, where one-half the herd of cattle proved to be tuberculous and where the pigs were fed on the offal of these cattle killed for beef, I found that the swine were as a rule, similarly affected. I am informed that it is no uncommon thing here in New York for a cow run down by tuberculosis to be butchered in some out-of-the-way place, cut up into mince meat and put on the market as sausage.

Then, again, the danger of contamination through offal and expectoration, though great for pigs, is even greater for chickens, which secure admission to every yard and eat indiscriminately any organic refuse they can find—notably thick expectoration. Then, too, the course of tuberculosis is far more virulent in the chicken than in our larger mammals, and the product is proportionately infective to other animals. Is it wonderful that in the State of New York for a period of eight years, ending 1888, every eighth death was from tuberculosis? We need not ignore or undervalue the accessory and predisposing causes of this dread disease. Many persons have undoubtedly a great power of resistance to tuberculosis, and the great majority escape death by this all but ubiquitous germ; yet the facts remain that none contracts the affection in the absence of the bacillus; practically no efficient measures are taken to restrict its prevalence, and 12 per cent. of our human mortality is caused by its ravages. Now one word as to the diagnosis of tuberculosis in animals. Speak of consumption, and the average hearer conjures up a vision of extreme emaciation, a frequent racking cough, profuse expectoration, with solid particles floating in a purulent medium, a heavy and somewhat offensive breath, inappetence, sunken eyes and general wretchedness. In, cattle, however the majority of cases show no such symptoms, at least for a length of time—often for years—after the onset of the disease. The symptoms will vary extremely, and prove in the main absolutely unlike in different cases, according to the organ attacked. I cannot take time here to enumerate the symptoms of the different forms, so I shall content myself with naming the organs most frequently attacked, to the exclusion of the lungs:

1. The bowels and mesenteric or sub-lumbar glands.
2. The throat and pharyngeal lymphatic glands.
3. The liver, spleen, pancreas, or kidney.
4. The generative organs (ovary, womb, testicle).
5. The subcutaneous and intermuscular lymphatic glands.
6. The cancellated tissue of the bones.
7. The skin.

As the involvement of each of these may assume all grades of severity, it must be evident that great skill is required to diagnosticate many a chronic or subacute case of tuberculosis in the animal. In many occult cases, indeed, diagnosis is practically impossible by ordinary tests, and in the case of dairy herds in particular the reaction with tuberculin may be invoked to attest whether the milk supply is wholesome or otherwise. Inoculations may further be resorted to in doubtful cases. These tests, however, together with the post-mortem examination in the abattoir, with the occasional resort to staining and microscopy, can only be conducted by the educated man.

To properly restrict such a disease as this, and to prevent its propagation to the human family from the brute, a professional supervision of dairy herds is demanded; also, of stockyards, but above all of slaughter-houses, and to make this last effectual, every town should have its *one* municipal abattoir, where alone animals may be killed and where every animal killed must be inspected. Meat that has not been inspected by the authorities should be debarred from the market.

ANTHRAX.—To turn to another animal contagion—*anthrax* may be selected. Though most deadly to both man and beast, this, when once started, is not propagated indefinitely in a locality. Its germ—the bacillus anthracis—is one of the largest of the pathogenic microbes, and was the first to be identified as a cause of disease. The disease is rarely propagated except by contagion from diseased animals—either directly, or through the medium of flesh, blood, morbid discharges, hair, wool, hides, bones, litter, knives or other solid bodies that have been stained with the diseased products. Its perennial home is in certain dense, wet or septic soils, in which its spores are preserved indefinitely, and which prove deadly to flocks or herds placed upon them. In open, well-aired soils it is soon rendered harmless. In man it is largely the disease of herdsmen, cattle-dealers, butchers, tanners, hair-workers, felters and wool-sorters, and, exceptionally, through the contaminated flesh, milk or cheese of consumers. Though this wholesale poisoning of men is exceptional, yet on infected soils it sometimes reaches a high figure. In 1770, 15,000 people died in six weeks in St. Domingo from eating anthrax flesh, and in the frequent anthrax years on the steppes of Russia a large percentage of the human population often perish in a single year. Beside this, the virus is carried and inoculated by mosquitoes and other blood-sucking insects, and thus man is usually attacked on the face, hands and arms—the parts which are habitually bare. The dangers to man are, therefore, coextensive with the prevalence of anthrax in animals. Anthrax may, however, appear as a general fever, with no local external lesion, or it may become localized in tongue, throat, bowels, skin, muscles, lungs or elsewhere, and according to its seat will be its symptoms and morbid changes. At the autopsy the engorged spleen may indicate disease, but it requires professional skill to say whether that engorgement is due to the bacillus anthracis, the shorter bacillus of blackquarter, a bacillus of septicemia, or the plasmodium of Texas fever. From Texas fever, however, man is exempt, and he can eat the flesh of its victims without thereby sealing his fate.

BLACKQUARTER, or bloody murrain of cattle and sheep, has been alleged to be uncommunicable to man, as anthrax has been said to respect swine, but there is a sufficient number of instances to the contrary to show that the immunity is by no means invariable.

DIPHTHERIA.—It may be a revelation to some that that dread of our nurseries—diphtheria—is also a disease of the lower animals, and that, among other parts, it attacks the udder and milk-ducts of cows, and thus through the medium of the milk it can find an easy entrance to the throats of children. Whether, therefore, in the dairy cow or in the slaughtered ox, the educated eye should be ready to detect and remove the animal charged with such a terrible infection.

Glanders is usually supposed to be confined to the horse and man, and in both alike it is rightly considered one of the most painful, loathsome and fatal diseases. It can be successfully inoculated not only in man and the horse, but also in the sheep, the goat, the pig, the rabbit the dog and the cat. The meat-inspector must, therefore, be acquainted with the affection as it occurs in each of these genera, and as it attacks the different regions of the body; for glanders may attack almost any portion of the system, to the exclusion, at first, of its common seats, the nose and skin. In this disease, too, as in tuberculosis, the germ (*bacillus mallei*) elaborates specific chemical poisons (ptomaines and toxines) which when inoculated in the suspected animals go far toward determining the presence or absence of the disease, by producing or failing to produce a febrile reaction in the subject. Again, as in tuberculosis, the germ of glanders can be cultivated on a large number of organic substances, as bread, potatoes, peptonized gelatin, etc., outside of the animal body, and hence its tolerance in any locality is a source of constant danger, and in the present state of knowledge nothing less than criminal.

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BOOK REVIEWS.

"A PRACTICAL TREATISE ON DISEASES OF THE SKIN."

By John V. Shoemaker, A.M., M.D., Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital of Philadelphia; Physician to the Philadelphia Hospital for Diseases of the Skin; Member of the American Medicial Association, of the Pennsylvania and Minnesota State Medical Societies, etc. Second Edition, Revised and Enlarged, with Chromogravure Plates and other Illustrations. New York: D. Appleton & Co., 1892. Pp. xi., 878. Cloth, $5.00.

To the general practitioner diseases of the skin are, as a rule, troublesome and perplexing. A work, therefore, written from the standpoint of the general practicing physician by so competent a man as Dr. Shoemaker must be one of great value. The intention of the author of supplying the needs of the medical student and of the general practitioner has certainly been admirably fulfilled. The first edition, published in 1888, was very popular with the profession and the second cannot be less so. It brings the subject fully up to date and presents all of importance that is known regarding etiology and pathology. A special section has been added upon the uses of electricity in cutaneous diseases, and one upon the effect of diet in their causation and treatment. The section devoted to a description of the various changes which the nails undergo in consequence of local or general disease is of especial interest. The chapter upon general treatment is extremely good, though arsenic might have been discussed with more discrimination. That upon local treatment is extensive and could with difficulty be improved. The ample space devoted to treatment throughout the book is a marked feature. Directions are explicit and exact and of a nature to render the work practical in the extreme.

The author evidently has no sympathy with specialism, which in this instance may be called with propriety "skin deep." He strenuously urges the proposition that efficient treatment of diseases of the skin requires on the part of the physician a thorough knowledge of general medicine. He believes that the physician, if a thorough investigation is made, will in the majority of cases be led to the employment of both local and constitutional remedies. His position upon this subject is sensible and judicious. The association of the skin with the various other organs and functions of the body is so intimate that local treatment alone will in the great majority of cases fail to yield the most satisfactory results.

The work is a complete treatise upon all cutaneous lesions and eruptions, including measles, scarlet fever and other infectious diseases with cutaneous manifestations, as well as chancroid, syphilis and various tumors. In the article upon erysipelas, which is a particularly good one, the author speaks with much favor of pilocarpine hypodermically for strong adults, with an ointment of oleate of bismuth for local use. He discribes the method of scarification but is non-committal as to its efficacy. The chapter on syphilis is worthy of special mention. It is concise and clear cut and admirably adapted to the need of the busy practitioner who wishes not only to make a diagnosis but to determine the stage or duration of the disease.

It would be impossible to write a strictly original book upon skin diseases; but the author has written from great experience, and has produced a book as nearly original as it well could be. The illustrations are from his own cases, and are very handsome and add materially to the value of the work. The extensive formulary is by no means an unimportant feature, and renders the book very convenient for ready reference.

"Contributions of Physicians to English and American Literature." By Robert C. Kenner, A.M., M.D. [The Physicians' Leisure Library.] George S. Davis, Detroit: 1892. Single copies, 25 cents.

This little volume is disappointing, partially in its make up, but more especially in the meager results obtained by such a review of our literature. That but twenty names of literary physicians could be found worthy of mention during the three centuries since the Elizabethan period is a little surprising. Of these very few can be considered as taking a high rank. The names that will be most familiar to the general reader are those of Arbuthnot, Crabbe, Erasmus Darwin, Goldsmith, Keats, Lever, Locke, Smollett and Holmes. According to the author the profession in this country has produced but two literary men—Oliver Wendell Holmes and John W. Draper.

One is disappointed, also, in the character of poetical compositions upon professional or allied subjects. There certainly are themes connected more or less directly with professional work worthy of the poet's attention, but the medical poet at least has failed to see them. Dr. Holmes has done by far the best work in this field, but his reputation does not rest upon the "Stethoscope Song," nor "Rip Van Winkle, M.D." "The Last Leaf" and "The Chambered Nautilus" have more intrinsic worth than all his medical poems combined.

"Diseases of the Nervous System." By J. A. Ormerod, M.D., Oxon., F.R.C.P. Lond., Medical Registrar and Demonstrator of Morbid Anatomy at St. Bartholomew's Hospital, Physician to the National Hospital for the Paralyzed and Epileptic, Queen Square, etc., etc. With numerous illustrations. Philadelphia.: P. Blakiston, Son & Co., 1012 Walnut St., 1892.

The preface of this admirable little book of 350 pages expresses so well the author's reasons for, and his aims in writing it, that we cannot resist the temptation of quoting it entirely: "The subject of nervous disease, attractive though it may be, is apt to inspire the beginner with a feeling of dismay—it grows so fast, it has so many roots and branches, it presupposes so much knowledge and demands so much expenditure of time. Thoroughly to grapple with it, he will indeed require much patient clinical work, as well as study of those excellent and elaborate treatises which happily exist. This little volume is offered to him as no substitute for these, but only as an introduction to his work and outline map of territory to be acquired; and should it thus prove to him, perhaps by its very smallness, an encouragement and aid, then it will have served its end." When any author has such clear ideas as to the field which his writings ought to occupy, and expresses those ideas as modestly as has been done in the last sentence of his preface, the average reader, without going further, will agree that a strong point has already been scored in his favor. While the book under consideration is abreast of the times, there is nothing new in it to those who have kept themselves posted on the subject of nervous disease. As a rule, though, only specialists in this department do this, and the vast majority of the profession are not specialists; so it is to these latter, or, better still, to those who are just commencing to take up the diseases of the nervous system as a specialty, that this book is peculiarly well suited. The first seventy-four pages are devoted to an "Anatomical and Physiological Introduction" in which such anatomy and physiology of the nervous system as will be useful are given, though the author presupposes that a groundwork in these subjects has already been laid. Then follow the "Morbid Anatomy of the Nervous System;" "Methods of Investigation;" "Symptoms Referable to the Organs of Special Sense;" "Electrical Examination;" "Muscular Distribution of Nerves." Then 129 pages are given up to the consideration of the nervous diseases, and while, of course, in so little space the author cannot go into each disease exhaustively—frequently saying not more than a few words about some—enough has been said to prove of much value to the novice in this department. While just here, we will call attention to two points, though comparatively slight ones, which can be adversely criticised. In the description of Romberg's symptom we think the author would have been more exact had he said "after swaying movements of the body the patient will fall if not supported," instead of "he will fall," without any qualifications, and in the treatment of the pains in certain diseases, e.g. in locomotor ataxia and sciatica, nothing has been said of phenacetin, which frequently gives gratifying results. However, as these are minor points, and the book is really such a good one, they ought not to detract from its value. A set of "cuts" of the motor points after Erb and De Watteville is given in the last pages.

"Materia Medica and Therapeutics: A Manual for Students and Practitioners." By L. F. Warner, M.D., Physician of St. Bartholomew's Dispensary, pp. 223.

"Practice of Medicine." A Manual for Students and Practitioners. By Edwin F. Doubleday, M.D., and J. Darwin Nagel, M.D., pp. 221. Lea Bros. & Co., Philadelphia.

When these bright little books are compared with the compends and quiz books of our own student days, we find cause in telling the student of the present time that his lines have indeed fallen in pleasant places.

Here we have knowledge boiled down into the most concentrated and yet assimilable form. So long as competitive examinations shall be relied upon to satisfy the cravings of ambitious young men for high positions in college and hospital, so long will these books be relied upon. Since we must have them, it is well that they emanate from a house whose whole life has been spent in giving our profession useful books.

Even in these unpretentious volumes, the careful mechanical work betrays its source.

"Treatise on Gynecology, Medical and Surgical." By S. Pozzi, M.D., Professor Agregé a la Faculté, de Médicine Chirurgien del Hôpital Lourcière, Pascal, Paris; Honorary Fellow of the American Gynecological Society. Translated from the French edition under the supervision of and with additions by Brooks H. Wells, M.D.

Under the head of Clinical and Operative Gynæcology, the author offers a clear exposition of this large subject, beginning with "general considerations." As a true Frenchman, he continues in this volume to insist upon the fact brought out in the first, that gynæcology owes much more to French physicians than has generally been admitted. In bringing out the important position taken in gynæcology by inflammation of the uterine appendages, the historical fact is emphasized that Aran and Livedey clearly recognized it, but it remained in oblivion because surgeons did not follow the path laid out by these pioneers until Lawson Tait's knife made its active propaganda. The author's reference to the fact that the interminable and wearisome discussion whether inflammations began in the cellular tissue, etc., is now only a memory, furnishes the best evidence that he is in the very front lines of gynæcological advance.

Without entering into wearisome detail, a careful reading of this book leads to but one conclusion: that it is the product of a mind, combining in a remarkable degree learning, acuteness of observation, and a truly practical trend.

The history and descriptions of technique of gynæcological operations are models of fullness and clearness.

While the author's patriotism is frequently evident in these pages, they really furnish the most cosmopolitan presentation of modern gynæcology.

The intelligent supervision of the editor, his addenda, and the abundant bibliography upon every important question, contribute to make this work a bright and unfailing book of reference for the specialist, while the general practitioner may obtain from it the most recent expression of reliable authorities, and the mechanical execution of the work offers a worthy casket for the treasures contained within it.

THE EFFECT OF DISEASES OF THE EAR UPON THE GENERAL CONDITION. By William Cheatham, M.D.

FEMORAL AND VENTRAL HERNIA IN WOMEN: THE KANGAROO STRUCTURE Marcy.

TUBERCULIN AND THE LIVING CELL. By Charles Dennison, A.M., MD.

ADENOID VEGETATIONS OF THE PHARYNX: A FREQUENT CAUSE OF DEAFNESS IN CHILDREN: THEIR REMOVAL. By S. Lotimer Phillips, M.D., Savannah, Ga.

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MEDICAL NEWS AND NOTES.

Dr. Ira T. Johnson, coroner's physician of Rochester, N. Y., reports in the *Medical Record* of October 1st a case of transposition of all the asymmetrical viscera in a woman who had died of uterine cancer; the organs normally occupying the right side were on the left, and all their parts bore the relation to the left side that they should have borne to the right, and, conversely, the organs that should have been on the left side were transposed, in position and relation, to the right side.

This *Alice in the looking glass* sort of woman had been right-handed during life, and the report does not mention any abnormalities as having occurred in her physiological functions.

Physical examination of a daughter aged 16 years revealed no abnormal position or relation of the viscera.

TO RETAIL DRUGGISTS.—It is uncommon to find anything in a drug journal supporting the physicians in their conflict with the prescribing druggists. The following clipping from the *Bulletin of Pharmacy* covers the ground thoroughly and forcibly:

While retail druggists are complaining of cutters and of their loss of margin in profits on handling patent medicines, many of them overlook a source of patronage the cultivation of which would add materially to their income.

There are numerous physicians to-day, buying their medicinal supplies from physicians' supply houses, who, with proper treatment, might be induced to patronize their local druggist. Do you do what you can to accommodate the doctor and make it to his interest to buy from you? There is not one doctor in a hundred but would prefer to buy his drugs in small quantities as he requires them, rather than place an order with a physicians' supply house for a large amount. The doctor would rather invest fifty or seventy-five cents in a small package than order twenty-five or fifty dollars' worth at a time from a supply house at a distance, if you would break stock packages and allow him a reasonable proportion of your discount. The physicians' supply houses are here to exterminate the retail druggist if they can. Why not retain your natural customer?

Do you try to win the confidence and co-operation of the doctor by refusing to advise people who come to you for medical advice, and suggesting they apply to one of your doctor customers? Probably not. Do you refill prescriptions on the patient's request without orders from the physician? If you do, you make yourself a competitor of the doctor and cannot expect his patronage. If you pretend to cater to him and make every effort to cut his throat, you may expect the doctor of the future to do his own dispensing.—*Western Med. Reporter.*

OUR AUGUST VACATION TIME.—The editor of the *Maryland Medical Journal*, in considering the advisability of his taking a summer's outing, falls into a monologue, like the Prince of Denmark, and murmurs: "To skip or not skip, that is the question. Whether 'tis better in town to suffer the heat and swelter of the month of August, or to take grip in hand and migrate to some mountain clime, or to some pebbled beach? To dive, to swim, to loaf, but in that loaf what images of science come forth—the clustered rods of typh-bacillus, lurking in myriads in the hotel well, borne on the seepage of some neighboring cesspool; the organisms that thrive in dysentery; the germs of common everyday sepsis, each form more toxic than the other. Coiled on the mountain lurks the dreaded rattler, with lethal hypodermic ready; or at the seaside, in those hired bathing garments hide the germs of grave infections—of eczema, chancroid and secondary—ready to fasten on the fretted skin."

These apparitions of uncertain ills puzzle the will, and make him rather bear the city trials he has known, than fly to country ones which mayhap are worse: Thus science doth make coward of the editor, and he grows sicklied o'er with the pale cast of doubt and excessive transpiration from the heat. The newly developed, almost virgin fields of North Carolina should be good for his complaint.—*Journal A. M. A.*

THE Eleventh International Congress will meet in Rome, Italy, from September 24th to October 1st, 1893. By an official letter dated August 22, 1892, and by Prof. Guido Baccelli, president, and Prof. E Maragliano, secretary-general, Dr. A. Jabobi, of New York, has been directed to form an American sub-committee. Its membership is not yet complete, but on it are already found, beside that of the chairman, the names of Drs. Wm. Osler, of Baltimore; S. C. Busey, of Washington; N. S. Davis, of Chicago; Charles A. L. Reed, of Cincinnati; Wm. Pepper, of Philadelphia; F. Peyre Porcher, of Charleston; James Stewart, of Montreal, and Alexander J. C. Skene, of Brooklyn, N. Y. In the interest of facilitating the trip to Italy, and reducing the expense, arrangements will be made with the steamship companies. According to a communication from the central committee—contained in a letter of the secretary-general's dated September 14th—the North German Lloyd proposes to reduce the fare to Genoa by twenty per cent., and that of the return trip by ten per cent. It is expected that still more favorable terms will be secured.

On the Value of Methylene-blue in Malarial Fever.—Dr. W. S. Thayer, after reading the results of the experiments of Guttmann and Ehrlich, treated seven patients systematically, and arrived at about the same conclusions as Myer:

1. Methylene-blue has a definite action against malarial fever, accomplishing its end by destroying the specific organism; but it is materially less efficacious than quinine, failing to accomplish its purpose in many cases when quinine acts satisfactorily.
2. The action appears to be rapid, the chills disappearing and the temperature in the remittent cases falling to normal during the first four or five days; but later, however, if a sufficient number of organisms have resisted the drug, they appear to develop again directly under its influence, causing a return of the symptoms.
3. Methylene-blue seems to have no advantages over quinine which would warrant its further use.—*Bulletin of the Johns Hopkins Hospital*.

Origin and Seat of Epilepsy.—In a recent address on this subject, Horsley makes the following statement: "Whatever be the point which the epileptogenous agency first attacks, we must conclude that the principal seat of the disturbance of a general or idiopathic fit must be the cerebral hemispheres, and especially their cortical mantle. Further, that the condition of the cortex during the attack is one of congestion, and not anæmia; and finally that in all probability this portion of the encephalon is actually the place of origin of the disturbance."

Dr. W. A. Wile, of Danbury, Conn., has been elected surgeon-general of the G. A. R.

Dr. Charles E. Sajous, of Philadelphia, editor of *The Medical Annual*, has been named a Knight of the Legion of Honor by M. Carnot, in recognition of his services to the French colony in Philadelphia. Dr. Sajous is of French descent.

The Chicago Clinical Review is the name of a new monthly, the first number of which bears the date of October. Dr. George Henry Cleveland and Dr. Albert I. Bouffleur are the editors, and there is a long list of collaborators, containing the names of well-known clinicians and writers.—*Medical News.*

Do Doctors Get Cholera?—The impression that the physicians who attend cholera patients do not get the disease is not well founded. Of the fifty doctors who went to Hamburg to assist in the work there, hardly one, we are told, escaped a more or less severe choleraic attack.

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EDITORIALS.

The Simplification of Therapeutics.—The day of a more precise, hence more scientific, application of remedies in the management of disease is dawning. Polypharmacy is the offspring of that mysticisim with which our forefathers were wont to surround themselves unconsciously. In all other phases of human endeavor a spirit of inquiry is abroad; the devout churchman even asks questions to-day which a few decades ago he would have deemed sacrilegious to entertain. He does not on that account lose aught of the true essence of religion; but he satisfies his reason as far as is consistent with his faith. We cannot marvel, therefore, if the doctor's clients often want to learn something of the agencies resorted to in combating an enemy supposed to reside within them.

The multi-pharmaceutical prescriptions we give him are not open to his comprehension; indeed candor would oft compel the prescriber himself to acknowledge a lack of rational appreciation of the objects and aims of his medication.

It has come about, therefore, that the latter has become more simplified. The shotgun prescription of a former epoch is now rarely seen. Only rarely do we find the professor of Materia Medica and Therapeutics dictating long formulæ of pharmaceutical combinations whose action it would be impossible to reconcile. The trend of teaching now is in the direction of the *rationale* of remedies. Thus the student becomes less slavish in his adherence to formulæ because he understands better the principles underlying the action of their component parts.

We may learn a valuable lesson on the Evolution of Simplified Therapeutics, and its enormous value, from the surgeon. When antiseptic surgery first astounded the filth-ridden surgical world, the minutiæ of spray, gauze, protective, etc., seemed absolutely necessary to success. Some of the older surgeons like Prof. Frank Hamilton, would never take kindly to the "hocus-pocus of antisepsis," as he termed it. This writer, imbued with the enthusiasm due to the grand achievements of antiseptic surgery in Volkmann and Billroth clinics, and which were gradually illustrated also in our own hospitals (even in the then unclean Bellevue), inveighed in some caustic articles in the *Medical Record* against the skepticism of this surgeon. To-day we have reason to believe that Dr. Hamilton was not so far from the correct creed. We discover now that poly-antisepsis is unnecessary; that the chief element of true antisepsis is asepsis or *cleanliness.* The scrupulous, unflinching, searching and skeptical cleansing of the field of operation, of the operator, and of the wound, proves to-day to be the source of the most brilliant surgical statistics. A recent work, "Aseptik," by Dr. C. Schimmelbusch, Assistant Surgeon to the Koenigl. Universitæs clinic of Professor Ernst von Bergmann, in Berlin, offers such convincing demonstration of the correctness of the view, that we ask the reader's attention to a few points insisted upon by this trustworthy observer, upon whom devolves the preparation of cases for the most renowned surgical clinic in Germany. *He considers "boiling water as the most powerful of all disinfecting agents"*; it kills anthrax spores in two minutes and the ordinary bacilli and cocci in one to five seconds. Steam kills anthrax spores in ten to fifteen minutes. He regards corrosive sublimate as having less power than was formerly supposed. Cultures have been obtained from anthrax spores which were immersed in a 1-1000 sublimate solution for an hour. S. insists upon "the uselessness of the far too prevalent custom of immersing objects in it for a few seconds in the expectation of thus sterilizing them."

Five per cent. solution of carbolic acid, so much relied on, is still less active as a sterilizer. Instruments are best sterilized by boiling in a one per cent. watery solution of carbonate of soda for five minutes; the soda increases the sterilizing power of the boiling water, because *it removes only a fatty material and prevents rust.* What is this but plain, unvarnished cleanliness? S. sterilizes dressings by steam, and hypodermic needles by boiling water, and says he has obtained 5,000 colonies of bacteria after disinfecting the same syringe with 3 per cent. carbolized solution. He sterilizes sponges, and infected towels, sheets etc., even by placing them in a pot of one per cent. carbonate of soda solutions boiling hot. He uses "plain sterilized gauze, dryness being the essential. There is no agent which prevents decomposition of secretions in a bandage more simply, harmlessly and promptly than does dryness. Moisture is the peculiar life principle of the lower organisms; dryness their greatest foe." Here again we have simplicity of treatment proven effective by laboratory experiment and reaffirmed by the clinical tests of a year.

How soon will all surgeons realize the value of this simple procedure? Evolution is a slow but sure process; it behooves us to further it by the presentation of the subject in its true, its scientific aspect. While this evolution to the simpler, hence higher, type of treatment is going on in the brilliant field of surgery, let the physician draw lessons of value from it. May we not by simplifying medication, by boiling down, as it were, our formulæ to active therapeutic entities, by eliminating mystical, inexplicable methods, and holding fast only to simple, rational, demonstrable therapeutic agents, do as much for internal diseases as the surgeon has done for the palpable or external. It is a consummation devoutly to be wished; it must come in good time. In the mean while the sick are languishing or dying under our ministrations. "Let us be up and doing." Who shall be the Lawson Tait of Internal Medicine? The man who is bold enough to combat the prejudices of that most prejudiced middle class—the medical practitioner.

The Blessings of Cholera.—The cholera scare has left some blessings in its wake. The people have been aroused to the realization of the fact that as we no longer live in the middle ages, the panic and fear engendered by epidemics are as foreign to our period as they were part and parcel of the former.

The application of plain common sense has solved the cholera problem. Cleanliness, that talisman by which mankind shall be made healthy and happy, has demonstrated its superior power. More effective than sublimate and carbolic acid, steam, and fresh air, and whitewash, and soap and water have driven the dread invader from our harbor. The microbe shuns the bright sunlight and the pure air; soap and boiling water are his worst enemies. The broom, too, is doing good work. Witness the supreme cleanliness of the streets of this great and whilom dirty city. What the clamor of the people and the taunts of the press failed to accomplish was done in a trice by the gaunt specter of cholera hovering at our gates. It pointed its hideous finger to our streets and alleys, and lo! they were swept and swept until they now vie with the best streets of any European capital. What a blessing in disguise cholera has been to this city will never be fully realized. The lesson of cleanliness, of healthful living, of shunning bad food and foul drinks, of the value of temperance, of a calm spirit, of humane regard for our kind—all these shall remain as the silver lining which has proven a remnant of the dark cloud that, but a few weeks ago, hovered so threateningly over us.

Meeting of the New York County Medical Association.—A most interesting meeting of the New York County Medical Association was held Monday evening, Oct. 17th, at 12 West 31st Street. The order of exercises was as follows: I. Cholera: Its Propagation and Treatment, by Charles A. Leale, M.D. II. Choleraic Diarrhœa in Children and its Differentiation from Asiatic Cholera, by J. Lewis Smith, M.D. III. Bacteriological Diagnosis in the Cases which have lately occurred in New York, by Edward K. Dunham, M.D. IV. The Probable Advantages of Quarantine and the Proper Methods of Conducting it, by John Godfrey, M.D., U. S. Marine Hospital Service. V. The Pan-American Medical Congress, and its Influence on Sanitation and Quarantine. General Discussions. Without drawing any invidious comparisons, for the proceedings of the entire evening were of an unusually high order and every address was most praiseworthy, we cannot help referring more particularly to those of Drs. Dunham and Godfrey. The former had not prepared a paper, but in lieu thereof he gave a most instructive stereoptical exhibition of cultures of the cholera bacilli prepared from the several cases which lately occurred in New York. Dr. Godfrey's address was clear, concise and practical, and, as he has had much experience in matters pertaining to quarantine, it was of especial value. Believing in the absolute advantages of quarantine, he stated in an impressive manner how these advantages are to be obtained, citing instances which had come under his personal observation. He advocated taking the matter entirely out of politics, placing it under the care of the general government, which should then establish, at necessary places, stations equipped with good bacteriological laboratories presided over by skilled bacteriologists. With all of this we most heartily concur, and believe that when such measures prevail, the results will be such as to make those who are now most skeptical, advocates of quarantine. We know that many, particularly our English cousins, denounce quarantine as barbarous, and ridicule the idea that it can be productive of good. In reply, we can only say that most of us on this side the water believe that a judicious quarantine is of immerse advantage, and that is the safeguard on which we, peculiarly subjected as we are to dangers of infection from abroad, must rely. Of course we are all well aware that much inconvenience and some apparent pecuniary loss are inflicted by quarantine, as at present administered, and this will always be so to a greater or less degree; but it can be reduced to a minimum, and how much better it would be for those who are really interested in matters of public health to aid in perfecting a system whose advantages have been so lately demonstrated than to decry it when they cannot offer a good substitute.

TREATMENT OF STRYCHNINE POISONING WITH THE ELECTRO-MAGNETIC CURRENT.—In an abstract in a recent issue of the *British Medical Journal* a successful application of the electro-magnetic current to a dog that had been poisoned with strychnine is reported. The animal presented unmistakable symptoms, and it was thought that he had taken a grain of the poison, but almost as soon as the current was applied to the spinal column the muscular rigidity subsided, and he was so far recovered at the end of four hours as to be able to walk home. Experiments were subsequently made upon dogs, under various conditions, and similar results were obtained. The author (Mackenzie) suggested that the method was worthy of further investigations. No explanation of the mode of action of the current is offered, but we suppose its action was by diminishing the excitability of the cord, thus antagonizing the action of the poison. The real status of electricity as a therapeutic agent is at present so ill defined that most any results which apparently proceed from its employment ought to be pushed to a thorough investigation. During the past few years many earnest workers have been engaged in this truly broad and intricate field, with gratifying results in many cases, and it is to be hoped that in due time the uses of electricity will be well defined, and that it will take its true place in therapeutics.

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ORIGINAL ARTICLES.

ARTICLE I.

CONTINUED OR TYPHOID (?) FEVER OF THE SOUTH.

By John P. Wall, M.D., of Tampa, Fla.

The continued fever within my scope of observation is, in my opinion, typhoid fever, although lacking in some of the symptoms of this latter fever as detailed by the majority of writers. For instance, I do not recall ever having met with the rose-colored eruption upon which so much stress has been laid by most authorities; nor have I witnessed many cases in which *coma vigil* or muttering delirium was present as a symptom to any marked extent, except toward the close in fatal cases, as is usually the case in any protracted febrile or inflammatory affection resulting in death.

The continued fever, to which I desire to call attention, is a fever usually continuing from three to six weeks—the average duration being about a month, though occasionally a case is met with of much longer duration than six weeks. It not unfrequently begins as an intermittent for a few days or a week; or, at least, the patient will state that for several days there was a dumb chill—a sensation of chilliness daily—followed by fever and probably a sweat. This finally assumes a more or less remittent type, a remission occurring some time in the twenty-four hours, most generally in the morning during the first two weeks, but afterward at irregular times; and after the second week of the continuous type having been assumed, the patient may again complain of having chills or being chilly, generally in the night, though occasionally at irregular times, followed by a rise in the fever. The tongue is in the majority of cases coated with a whitish or slightly yellowish coat, sometimes broad and indented by the teeth, and again of a more natural size with red tip and edges. In some cases there is considerable nausea and vomiting in the first week, and rarely for a longer period, while in others the nausea and vomiting may be very insignificant, or almost wholly absent, during the entire course of the disease, especially after the intestinal track is left at rest after the first doses of purgative medicine, of which calomel is a constituent part, or calomel alone, which we are all in the habit of giving in the inception of most fevers, under the impression that the liver must be stimulated. In the majority of cases there is no disposition to diarrhea or much tympanitis, unless very free purgation has been pursued in the early stage of the disease by which a diarrheal tendency is induced. The tongue very rarely takes on the dark and dry crust, often cracked, accompanied with sordes on the teeth, which was such a common feature of typhoid fever in the earlier years of my practice, some thirty years ago. About the third week, however, the coat disappears from the tongue, which becomes red and often glazed and somewhat dry, though not wholly destitute of moisture.

In the large majority of cases gurgling is detected on careful palpation in the right iliac fossa, and the spleen is more or less enlarged, though occasionally either one or the other of these conditions may be absent, though rarely both in the same case. One other point may be noticed to complete the clinical picture of this continued fever, viz.: The absence of that waxy pallor usually so characteristic of malarial fever, notwithstanding the great emaciation induced by the long course of the disease. In view of the recent discovery of the *hematozoa* of the red corpuscles of the blood in malarial fevers by Laveran, and their supposed destruction of the red corpuscles, this last point assumes a peculiar significance worthy of consideration.

Hemorrhage from the bowels has been noted in a number of cases; in one instance in the third week it was so profuse and rapid as to produce death at the end of four hours from its inception in the case of the patient, who up to that time had progressed favorably and whose condition promised recovery. In another case it was very profuse, but fortunately I succeeded in checking it with free doses of Plumb. acet. and opium and by keeping the bowels confined for a week. In one instance there were all the symptoms of perforation followed by speedy death. From other medical men I have obtained histories of similar cases of hemorrhage and perforation. In one instance only have I detected albumen in the urine. It was not present on the seventh day after the patient took to his bed, and then I neglected to examine the urine again till the eleventh day, when albumen was found in pretty free quantity, about five per cent. of volume. After that the urine was examined daily and albumen in about the same quantity was found for five days, when it gradually diminished *pari passu* with the improvement of the patient under the cold bath treatment of Brand, and disappeared the twelfth day from the eleventh day of the day of the illness, the date when its presence was first noted.

Delirium has not been present as a rule. *Subsultus tendinim* and muscular twitchings have not been very conspicuously present except in cases of a grave nature and during the time of high temperature ; though as a rule, slight twitchings of the tendons at the wrist could be noted in nearly all cases. Insomnia is frequently present during the first two weeks, or else the patient takes short unrefreshing dozes so light and brief as to cause him to believe that he has not slept at all. The opportunities for *post-mortem* investigation have been rare, as is always the case in private practice ; but in the few instances in which I have made *post-mortems*, the characteristic intestinal ulcerations of Peyers' patches were found with enlargement of the spleen ; and similar pathological lesions have been reported to me by my friends, Drs. Wylly and Caldwell, who live in other parts of the State. I had the opportunity of showing my friend, Dr. John Guiteras, late of the Marine Hospital service, a part of intestine from one of my autopsies, which he pronounced to be undoubtedly the lesions of typhoid fever, and made allusion to the same in the *Therapeutic Gazette* in 1884 or 1885, I am not certain which, as the number of the journal was loaned to a friend and got lost. So far this continued fever has appeared to be of a rather mild type, judging from the small mortality which has resulted from it, and to this fact may be due the absence of the rash and the dry, dark, crusted tongue, though as to the latter I am inclined to the opinion that the absence of this dry, dark, crusted tongue with accumulations of sordes on the teeth, is due to the difference of treatment now pursued and that of a quarter of a century back, when calomel, opium and turpentine were so freely administered.

In the article in the *Therapeutic Gazette* before alluded to, Dr. John Guiteras describes a fever like this continued fever which I have endeavored to portray, as thermic fever, occurring in Key West, Fla.

He admitted to me, however, that he had made no *post-mortem* investigations ; so that the inference is that, in the absence of some of the characteristic symptoms of typhoid fever, the doctor naturally assumed that it was a new type of fever. And I must confess myself that I entertained the same opinion for many years, and in making my first autopsy I was greatly surprised when confronted by the pathological lesions of typhoid fever which I did not anticipate finding.

There is, however, a continued fever of from four or five to ten or fifteen days duration to met with occasionally which may be classed as thermic or exhaustive fever. In a late number of the New York *Medical Record* Dr. Wendt gives a very clear description by an English physician of a similar fever occurring in Rome, Italy, and which this English physician denominates *chill fever*, as occurring in those who undergo much fatigue with insufficient nourishment and become chilled by exposure to draughts, or cooling off too rapidly in cool rooms. After continuing several days, or a week or so, this fever subsides almost suddenly without appearing to have been materially influenced, as to its duration, by treatment. This class of fevers is not unfrequently met with and generally passes current in the profession as bilious fever, or bilious attack. They are no more cut short by quinine, however, than are the genuine cases of continued fever occurring among us in these southern latitudes, and which I consider typhoid fever, though generally denominated typho-malarial by the majority of the profession. As militating against the assumption of there being a malarial cause, either in whole or part, for the continued, or typhoid, fever under discussion, it is to be remarked that evidences of malarial infection, at the time or prior to the attack, in either the patient or others of the family living under the same conditions, are entirely absent. The fever attacks one member of the family and runs its course without any other member being similarly affected. In a few instances I have observed as many as two members of the same family to have the fever consecutively, the latter being taken sick directly after the convalescence of the former. Nor is this fever found prevailing to any considerable extent in localities where genuine malarial fevers are common. Nor is it influenced materially in its course or duration by the well-known anti-malarial remedy, quinine. Hence, in view of this facts it is very evident that malaria is wholly wanting as an etiological factor; in short, it would only be in an exceptional case wherein there would be any malarial element at all. Moreover, in a recent letter to me, Lieut.-Colonel George Sternberg, surgeon, U. S. Army, says: " I think there is little doubt that your continued fevers, which do not yield to quinine, are simply typhoid."

As has recently been pointed out by Drs. Wm. Osler, George Dack and other writers who have studied the *hœmatozea* of Laveran, it appears that the diagnosis of malarial fevers can be positively determined by an examination of the blood; and consequently it is from this standpoint that the continued fevers of the South should be studied in the future to determine how much, if any, they partake of a malarial element. On this point Osler says: " To be able everywhere and under all circumstances, to differentiate between malaria and other forms of fever is one of the most important advances which has been made of late years in practical medicine, one which will revolutionize the study of fevers in tropical and sub-tropical countries, and should, within a short time, bring some order out of the chaos which at present exists regarding the different fevers which there prevail.

"So far as I know not a single observer, who has had the necessary training and the material at his command, has failed to demonstrate the existence of these parasites." It will thus be seen that the continued fevers of the South should be more thoroughly investigated and studied by the bacteriologist and pathologist to determine their true character; and it is to direct the attention of the profession to these points that has induced me to write this paper. In fatal cases autopsies should be made whenever possible, and pathological specimens, as suggested to me by Dr. Sternberg, of intestine, liver, kidney, spleen and brain preserved in alcohol be submitted to some competent pathologist and bacteriologist for examination. In non-fatal cases specimens of the blood drawn under antiseptic precautions should be examined by a competent bacteriologist for the *plasmodium malaria*, by which name these *hœmatozoa* of Laveran are now designated. If it is a fact that the *plasmodium malaria* is to be found in some form, for it appears that it assumes several different shapes in the red corpuscles in all types of malarial fevers, its absence in cases of continued fevers would demonstrate the freedom of these latter fevers from malarial infection. Hence the importance of a more thorough study and investigation of the continued fevers of the South on the lines indicated.

So far as my observation extends, there are no facts to prove that the ingestion of the typhoid bacillus of Eberith or of the bacillus coli-communis of Escherich had anything to do with the attacks, nor was there any evidence of any contagion. It may be mentioned, however, that, as a rule, a great many more cases have been observed where surface well water was used than among those using cistern water or from other purer sources of water supply than the common surface well is supposed to afford. As shown, very little reliance is to be placed on the generally accepted doctrine of water infection as the cause of typhoid fever. I quote from an abstract of the Cavendish Lecture "on some points in the etiology of typhoid fever," by Sir Charles A. Cameron in the *London Lancet* of June 11, 1892, in which he says: "Localized outbreaks of typhoid fever can frequently be directly traced to the use of a particular supply of polluted water or milk; but the widespread epidemics of this disease, and even its persistent occurrence in so many towns, must be due to some other cause. For example, in Dublin it was epidemic in 1891–92, and in 1889 it appeared in all parts of the city and adjacent districts. The city and all its suburbs, with one exception, are supplied with water procured from a gathering ground twenty-six miles distant, in a mountainous region of the County Wicklow. There are very few persons living on the drainage shed which furnished the Dublin pipe water, and of those few nearly all reside in a small village close to the reservoir in which the water is impounded. Last year it was asserted that a portion of the drainage of the village passed into the reservoir, but the statement was completely refuted. I believe there are few cities in the world supplied with such good water as Dublin fortunately possesses. I make this statement from the result of many careful examinations of the reservoir and its surroundings, and of hundreds of chemical and biological examinations of the water. There are very few wells now in Dublin, and only an almost infinitesimal proportion of the water drunk by the inhabitants is obtained from those sources. I dwell upon the fact that Dublin has a very pure water supply, because in view of the undoubted fact that typhoid fever is propagated by the medium of infected water, it is noteworthy that Dublin has almost the highest typhoid fever death rate in the United Kingdom. Dublin is a city with an undue amount of typhoid fever in it. It is supplied with pure water drawn from a distant source. Its local wells have fallen into disuse. Its street sewers are as good as those in English towns." From recent and current medical literature other instances might be added going to show that typhoid fever is not always dependent on the water infected with the germs of antecedent cases for its occurrence, as seems to be the generally accepted view of the present day. Besides, this fact is very evident to the observing physician whose practice has been in a sparsely settled country and small towns and villages.

Isolated cases of continued fever are continually making their appearance in almost every community in both town and country where infection from antecedent cases is wholly beyond the range of probability or even possibility. I do not mean, however, to deny that typhoid fever may never be due to infected water or milk; but to assume that it is always and invariably the case or to some other recognizable cause, as for instance sewer gas, is contrary to experience.

As to treatment it is unnecessary to say a great deal. Like all specific fevers it will run its course, and all that the physician can do is, if possible, to mitigate its violence and conduct the case to a favorable termination. As for curing typhoid fever, in the sense of stopping it and cutting short its further progress, the physician might as well claim to cure smallpox or measles; and it is hardly to be supposed that any sensible or well informed medical man of the present day would make such a claim.

In the beginning of treatment it is well to give a purgative to clean out the bowels; and for this purpose calomel alone, or combined with some vegetable cathartic, is about as good a remedy as any other. Of course in cases with a diarrheal tendency a medium dose of Dover's powders with five grains of calomel will be more advisable. From the beginning some one of the antipyretics of the chinoline series may be administered to reduce the temperature. My preference of these is phenacetine in 10 gr. doses for an adult every three or four hours, and in proportionate doses at the same intervals for children. Sometimes when phenacetine fails antipyrine or acentalide in the same doses at the same intervals. Either one or the other will be found efficient in reducing the temperature. In administering these antipyretics they should be given at regular intervals so long as the temperature is above 100 degrees F., and not be given only occasionally,when the temperature is very high, merely to reduce it within safe limits. The idea is to reduce the temperature and then keep it down by repetitions of the drug at regular intervals; and after seven years of their use I have found that 10-grain doses at intervals of three hours accomplish this fairly well. Once the temperature is lowered these antipyretics cease to produce the free diaphoresis which attends their use when administered when the temperature is high. Although not curative their use renders the patient much more comfortable by their reduction of fever, upon which alone depend many of the more annoying symptoms, such as aches and pains and not unfrequently nausea. As for their depressing action on the heart, I have failed to notice it, though the pulse rate may be lowered, notwithstanding the fact that I have again and again used them persistently throughout the whole course of the disease, extending through three or more weeks. Administered as I have indicated, it is rarely that any cyanosis is produced, and my preference for phenacetine is due to the fact that it rarely, if ever, produces cyanosis—never in my experience—though it might and probably would if given in large doses at short intervals.

After the bowels have been opened for the first few days I am in the habit of giving quinine along with the antipyretics, generally about 20 grains a day in 5 or 10 grain doses. The quinine is administered for diagnostic purposes, as it were; if the fever is malarial its specific effect can be reasonably expected in cutting it short; otherwise we may assume it to be of a continued type, though it is never well to announce a positive diagnosis of continued fever under the first week, and as we occasionally meet with another form of continued fever not typhoid, as already mentioned, it is well not to be too positive for the first ten days or two weeks.

The further management of the case during its continuance mainly consists in controlling the fever by the continuous and regular administration of antipyretics, regulating the bowels and judiciously nourishing the patient. For the last three years phenacetine has been my favorite antipyretic, though occasionally I have substituted antipyrine for it when the former failed to satisfactorily control the temperature. If antipyrine is resorted to after the first or second week it is well to give with it tinct. of digitalis in 5 or 10 drop doses. In a few instances I have noticed tachycardia when the pulse rate became abnormally low, but it was not of sufficiently frequent occurrence when phenacetine or other antipyretics had been continuously used as to lead me to believe that these drugs caused it. As for antiseptics I am constrained to say that I have found no special or marked benefit from their use. I have given salol more frequently than any others, but it produces a very dark color in the urine which is decidedly objectionable for obvious reasons.

In the past year I have given argenti nitrate in small doses from $\frac{1}{8}$ to $\frac{1}{6}$ of grain every six hours, combined with opium if there is a tendency to diarrhea, or with ext. belladonna if disposed to be costive, as suggested by Dr. Pepper. In cases where the antipyretics do not control the temperature, attended with delirium, restlessness, and other grave symptoms, with albuminous urine, the cold bath should be resorted to after the method of Brand. The bath should be repeated whenever the temperature gets up to 103 degrees F. The temperature of the bath should be from 65° F. to 75° F., and just before the patient is put in it a half ounce or ounce of whiskey or brandy should be given. While in the bath gentle friction with the hands over the body and extremities of the patient should be maintained, taking care to avoid anything like vigorous rubbing. The patient may be kept in the bath from ten to twenty minutes, though it might be as well to begin with the shorter period. On removing the patient the body should be hastily wiped, laid on the bed and covered up with sheet and blankets, while hot applications are made to the feet to restore their warmth.

It will be found that after the bath the temperature will fall for an hour or two ; and it is not intended that the patient is to be kept in the bath until there is a marked reduction of temperature. The chief guide to the use of the cold bath is the temperature, and it may be safely resorted to whenever the temperature is 103 degrees F., even if the intervals between the baths are not over two or three hours. It is a powerful remedy and therefore should be used with care and strict adherence to the simple details of administering a stimulant just before the patient is immersed, keeping up gentle frictions while in the bath, and restoring warmth to the extremities after the patient is put back to bed. Unfortunately it is not always available in private practice, as it can only be resorted to in exceptional cases when abundant assistance can be afforded, and hence the main objection, or perhaps it might be accurate to say chief obstacle, to its general adoption in practice—to say nothing of the requisite courage on the part of the physician, and the necessary confidence of the patient and friends in his judgment and skill.

Of course complications must be met and properly treated as they arise; and throughout the whole course of the fever it must be borne in mind that the ultimate recovery of the patient is a matter of time and constitutional endurance, and consequently the strength and vital powers of the patient are to be conserved as much as possible. The administration of stimulants as a practice is to be reprobated, and as a rule they should only be given when clearly indicated by weakness. If the patient experiences a desire for some kind of a stimulant it is as well to give it, and it may be repeated as often as desired provided it produces no giddiness or intoxicating effect.

ARTICLE II.

CIRCULAR ENTERORRHAPHY: A NEW METHOD.

By M. L. Harris, M.D., Professor of Surgery, Chicago Policlinic.

The many injuries to the intestinal tract producing solutions of continuity, the many accidents causing strangulation and local death, and the many diseased conditions leading to obstructions, have led to the introduction of numerous operative procedures whose aim is the restoration of the bowel's continuity and a reëstablishment of its caliber. The numerous methods which have been proposed, and the various modifications which they are almost constantly undergoing, indicate that an ideal method has not yet been devised, and it is this which leads me to present this brief review of the subject, together with some original investigations which seem to me to possess some points worthy of consideration.

The various operations which have thus far been proposed may be divided into two classes:

First. End-to-end methods, or circular enterorrhaphy.

Second. Lateral approximation methods, or anastomosis.

The diversity of conditions necessitating operative interference of this nature renders it perhaps impossible, or at least unadvisable, to always adopt one of these classes to the entire exclusion of the other.

However, the most natural way of restoring the continuity of a severed bowel has always seemed to be end-to-end, and could a perfect method be devised there is no doubt that it would be the most desirable way.

The earlier efforts were all in this direction, but the methods were so imperfect and so time consuming that when anastomosis was proposed its many advantages soon gained for it the precedence, but the work which is constantly being done by operators and experimenters in this line shows that they have not yet lost faith in the belief that the end-to-end way is the most natural and the most desirable when circumstances make it possible.

We may divide the history of this operation into three periods, the first beginning with the Four Masters of Paris in the thirteenth century, and extending down to Jobert in 1822. The characteristic of the operations performed during this period was the introduction of foreign bodies into the ends of the divided bowel to retain them in apposition and aid their union. These foreign bodies in the shape of cylinders were of various materials, both soluble and insoluble, such as the tracheæ of animals, sections of dried intestine, cannulæ of elderwood, and later gelatine tubes, Watson; tallow candles, Scarpa; and varnished card, Sabatier and Chopart. While Ramdohr, in 1727, is said to have operated successfully by sutures, still he seems to have stood alone, and the report of a successful case by Duverger in 1745 may be taken as an illustration of the method of operating during this period. A portion of a bullock's trachea furnished with pieces of thread disposed at equal distances, each end of which was provided with a curved needle, was introduced into the two ends of the bowel, and the needles passing through the intestinal tube from within outward insured the edges of the divided bowel being fixed and approximated over the trachea, while the fastening of the threads preserved the union.

The first attempt at a scientific investigation of the subject of intestinal union seems to have emanated from Richat and Richerand, who in the beginning of the nineteenth century presented the following propositions:

Adhesion between serous membranes is readily effected, provided the surfaces are kept sufficiently long in contact. Mucous membranes, on the other hand, unite with more difficulty, and the union of mucous and serous membranes cannot be directly accomplished.

These facts led to further research, and gave origin, in 1822, to the well-known operation of Jobert, which marks the beginning of the second period. The characteristic of the operations during this period is union by sutures alone without the aid of foreign bodies, and the period extends down to 1887, when Senn revived the introduction of foreign bodies again and marked the beginning of the third period.

Jobert's operation is the application of the principle of union between serous surfaces, and consists in turning in the lower end of the bowel for about one-half inch and then invaginating into this the upper end so that serous surfaces are approximated, the whole being retained by silk sutures passing through the three thicknesses of the bowel and penetrating its caliber. The ends of the sutures were left long and brought out at the angle of the external wound so as to be withdrawn when they had ulcerated through the bowel. This operation seems to have been the model after which most subsequent operators worked, and the "modifications of Jobert's operation" are now many.

The next important advancement was made in 1826 by the introduction of the Lembert stitch, which was made to include all the layers of the bowel except the mucous, and hence not penetrating the lumen of the bowel was a great step forward. By the adoption of the Lembert stitch Madelung modified Jobert's operation. Instead of having the sutures penetrate the three thicknesses of the bowel, he introduced a row of Lembert sutures around the outer edge or neck of the intussuscipiens "so that the invaginated portion would thus be directed valve-like whichever way the intestinal current passes, and the danger consequent upon mistaking the upper for the lower end of the bowel is avoided."

Czerny in 1881 introduced a modification of the Lembert stitch, or rather an addition to it, consisting of a primary row of sutures including only the edges of the mucous membrane.

By a combination of these two stitches, the Czerny and the Lembert, we have the so-called Czerny-Lembert method of intestinal union. It is applied by approximating the ends of the bowel and introducing a row of Czerny or mucous membrane sutures around the circumference of the gut, which is then turned in or inverted by a secondary row of Lembert sutures which approximate the serous surfaces. During this period, these two operations, the Jobert invagination method and the Czerny-Lembert, although varied somewhat by slightly different methods of stitching, may be taken as types of the operations performed without the aid of foreign bodies.

The third period, as already remarked, begins with the re-introduction by Senn of foreign bodies as an aid to the operation.

This period is remarkable for the number of operations which have been proposed and for the number and kinds, both soluble and insoluble, of bands, rings, tubes, cylinders, plates, etc., which have been devised. Senn first introduced the rubber ring, and his operation, according to him, "consists essentially in the use of a thin elastic rubber ring for lining the intussusceptum, to prevent ectropion of the mucous membrane, to protect the mucous membrane of the bowel against injurious pressure from the suture, to keep the lumen of the bowel patent during the inflammatory stage, and to assist in maintaining coaptation of the serous surfaces." The intussusseptum, lined with this rubber band stitched around the edge, is then, by means of two invagination sutures, invaginated into the lower end, the edge of which is turned in so that serous surfaces are approximated. No other stitches are used, the whole being retained simply by the two invagination sutures.

Ashton, in 1891, published his operation with the use of a rubber ring, which is practically the same as Senn's, and these two may be taken as illustrating the "modifications of Jobert's operation" by the aid of rings.

Paul, in 1891, introduced the following operation:

A long, decalcified bone tube, approximating in caliber that of the bowel, is provided with perforations around one end. This tube is introduced into and stitched to the proximal end of the gut, which then, by means of invagination sutures, is invaginated into the turned-in distal end.

Robinson, a little later, published an operation differing from Paul's merely in the substitution of a rubber tube for the decalcified bone. His tube is from four to six inches in length, "snugly fits the gut lumen," and three-fourths its length extends above the line of union, while one-fourth extends below it. These two operations may be taken as types of Jobert's, modified by the introduction of tubes or cylinders. In this connection we would mention Jessett's operation, merely to show what a complicated device may sometimes be employed to accomplish a very simple end.

He makes use of two decalcified bone tubes. One measuring one and one-half inches in length is made conical, so that one end is nearly twice the size of the other. This he calls the female tube. At the outer end four slanting holes are bored for the passage of catgut sutures. The other, or male tube, is twice the length of the female tube and divided into two portions. One, the spur, which is to be entirely outside of the intestine, is made so as to fit accurately the female tube, and is of equal size in its whole length.

The other portion is slightly smaller in circumference than the "female tube." The female tube is introduced into the distal bowel, where it is fastened by its sutures; the male tube, similarly threaded, is fastened into the proximal end. Now, by slipping one tube into the other the proximal bowel may be invaginated into the distal gut a sufficient distance, where it is confined by four quilted sutures. This complicated device reminds one of Denan and his different sized rings of nearly three-fourths of a century ago.

Beside these modifications of Jobert's operation we also find the Czerny-Lembert has been modified by the introduction of foreign bodies. As illustrating this class we may mention Brokaw's operation, introduced in 1889, with his segmented rubber rings. A ring as large as the bowel's caliber is provided with four equidistant sutures, each with a needle. This is then introduced into one end of the bowel, while the sutures are made to pass through the whole thickness of the gut about one-third of an inch from its edge. A similar ring is likewise fixed into the other end of the bowel. The two ends are then approximated, the opposite sutures tie, and a few Lembert stitches taken around the outside.

Robinson, in 1891, presented a paper entitled "Circular Enterorrhaphy by a New Method," which he describes briefly as follows:

A rubber tube from four to six inches long is inserted into the proximal gut and stitched around the edge. The mucous membrane of the distal end is dissected off with curved scissors and then curetted for about one-half inch. The proximal end is then invaginated into the distal gut so that peritoneal surface is in contact with denuded mucous membrane. A row of stitches around the circumference of the distal end, which, however, do not penetrate the lumen of the proximal bowel, completes the operation.

This operation consists in the application of the tube or cylinder to the so-called stovepipe joint proposed by Benjamin Bell, about one hundred years ago, and since by Amussat and others, together with the denudation or abrasion method of Chaput. Although Chaput developed the abrasion method in 1889, still the idea can scarcely be said to have originated with him, for we find that Moreau-Boutard, in 1846, states that he "excised everted mucous membrane and approximated serous to refreshened connective tissue." Chaput's operation, which he calls "circular enterorrhaphy by abrasion and application," is described as follows: "The resection being made, one of the ends of the bowel is seized between two fingers and the edge turned out by the aid of the pressure of a sponge. In this condition it is easy to abrade the mucous membrane for the distance of one centimeter with a sharp curette. The same maneuver is repeated on the other end. The two ends are immediately brought in contact, everted denuded mucosa against denuded mucosa.

"One has only to suture them in this position, which is done with a continuous suture.

"It is indispensable to protect the line of suture by wrapping the omentum around the intestine, and to fix it there by one or two sutures."

Chaput then says: "I have myself tried a method of invagination very simple, in which I abraded the mucosa of the lower end, then immediately introduced into it the upper end and sutured thus peritoneal surface to mucous surface, or rather denuded mucous surface. This last method gave me only failures in the dog in four experiments, therefore I do not recommend it."

Somewhat similar to Chaput's enterorrhaphy by abrasion is Kummer's submucous resection. In this operation the intestinal wall is cut through transversely until the submucous layer is reached. The layer composed of the serosa and muscularis is then turned back like a cuff each way about one and a half centimeters. The cylinder composed of the mucosa and submucosa is resected, the opposite ends of the mucosa brought together and sutured. The musculo-peritoneal flaps are then folded over so that serous surfaces are in contact, where they are united by sutures.

But two more methods remain to be noticed—Bishop's and Maunsell's. In Bishop's operation the edges are turned in, as in the Czerny-Lembert method, where they are united by a sort of interrupted shoemaker's stitch, so placed as to be all inside the bowel, extending through the thickness of both ends, and intended, in cutting their way out, to cause the rim which projects into the lumen of the bowel to slough off, thus leaving the inner wall of the intestine smooth.

In Maunsell's operation the ends of the bowel are brought together by two temporary sutures, one at the mesenteric attachment, the other directly opposite. The ends of the sutures are left long. An opening is made in the distal gut opposite the mesentery, about one inch from the end, and in length according to the diameter of the bowel. The ends of the temporary sutures are passed through this slit, when by drawing on them and manipulating the bowel the ends are invaginated into the lower bowel and brought out at the opening, where they can be easily stitched over and over. The bowel is then drawn back and the slit closed by a few stitches.

This will conclude the description of operations, and while all have not received attention, still those which present any particular variations have been noticed.

In order to consider these various operations, we may make of them two divisions.

First. Those performed with the aid of foreign bodies.

Second. Those without foreign bodies.

The objects which the advocates of foreign bodies claim for their introduction are:

1. To prevent eversion of the mucous membrane.
2. To facilitate invagination.
3. To maintain coaptation of the approximated surfaces.
4. To keep the bowel patent during the inflammatory stage.
5. To protect the mucous membrane of the bowel against injurious pressure from the sutures.

6. To prevent a continuation or extension of the invagination during the process of healing.

These points call for some remarks, and will therefore be taken up in order.

(1.) To prevent eversion of the mucous membrane.

This eversion has always been a great obstacle to end-to-end union, and many devices have been employed to overcome it. It is due mostly to contraction of the circular muscular fibers, and always occurs when an active bowel is cut across.

It is very easily overcome by a simple procedure and without the use of tubes or cylinders. Introduce the finger or a closed forceps into the end of the bowel and gently and slowly dilate it merely sufficiently to overcome the muscular contraction. The bowel will remain in this straight and smooth condition for some minutes and the eversion will have disappeared.

I have used this method for some time, and always with satisfaction.

(2.) To facilitate invagination.

This is likewise easily and quickly accomplished by a simple procedure which will be described shortly.

(3.) To maintain coaptation of the approximated surfaces.

In order to accomplish this the tube or cylinder must be of a proper size to fit accurately the particular bowel operated upon, thus requiring an almost endless variety in the size of the cylinders. It also means that after being once fitted, the bowel must remain constantly the same size, must neither dilate nor contract, although it is known to be almost incessantly varying its diameter. This constant action, this continual functionating of the bowel, has been particularly emphasized by one author as one of the greatest difficulties of intestinal surgery, and then he recommends the introduction of a changeless rubber tube to hold in approximation two movable surfaces. This, to me, seems scarcely logical. It is then stated that a section of bowel at the seat of the operation is always paralyzed.

But the experiments of Kader prove that a section of bowel which is paralyzed always dilates, hence what must happen when a paralyzed bowel is stitched to an undilatable tube? The surfaces must separate or the stitches cut and lead to fæcal fistulæ.

It is a noticeable fact that of the ten experiments published by Robinson to illustrate his "Circular Enterorrhaphy by a New Method," five, or fifty per cent., of the dogs died, and in thirty per cent. the cause of death is given as fæcal fistula. Ashton lost thirty per cent. of his dogs, while Brokaw, with his segmented rubber ring, lost fifty per cent. It seems to me there must be something radically wrong with the operation or the operator that results in from thirty to fifty per cent. mortality in healthy dogs, well known as they are to stand intestinal and peritoneal manipulation.

(4.) To keep the bowel patent during the inflammatory stage.

Unless the lumen of the bowel be occluded by the invagination or too much turning in of the edges there is nothing to obstruct it, and of course if it be paralyzed it will dilate. In either case the foreign body but occupies so much space and diminishes the caliber of the bowel to that extent.

(5.) To protect the mucous membrane of the bowel against injurious pressure from the sutures.

I don't see how the sutures are going to injuriously press the mucous membrane, but it is quite easy to understand how pressure necrosis may occur from a tube which is a little too large for the bowel, or from the sharp corners of a segmented rubber ring. And this is just what does occur. The pressure may result in gangrene involving the entire circumference of the bowel or ulceration and perforation. See Senn's Exp. 46. Dog died in thirty-six hours. Autopsy showed gangrene of the bowel from too large a rubber ring. Exp. 50. Dog died on the fifth day. Perforation from circumscribed gangrene of intussusceptum. Rubber ring still in place.

In a recent excellent statistical paper on this subject by Rosenthal, he says concerning foreign bodies: "I believe the practice of this procedure will soon cease * * *, as thereby we lay the ground for the development of a pressure necrosis of the bowel."

(6.) To prevent a continuation or extension of the invagination.

As most of these cases seem to have occurred to Robinson with the use of the rubber tube, the query is whether the invagination is not due to the peristaltic action of the bowel trying to move forward a foreign body which is stitched to the intussusceptum? Another objection to the foreign bodies is their tendency to produce enteroliths. I again quote from Senn's experiments:

Exp. 43. Circular enterorrhaphy with rubber band. Dog killed at the end of two weeks. An enterolith composed of fragments of wood, bone, etc., in the center of which the rubber band which had been the rubber ring was found just above the seat of the obstruction.

Exp. 44. Dog died suddenly eighty-one days after operation. Had had diarrhœa, and emaciated for last few weeks. An enormous enterolith composed of all kinds of crude material and again holding in its center the rubber band was found just above the invagination.

Exp. 48. Dog killed after seven days. Ring still in situ matted with hair. Enterolith forming.

Kummer says: "We must reject the method of introducing hollow foreign bodies, for directly they give origin to obstruction through the formation of stercoliths."

Sachs says: "For performing circular enterorrhaphy the use of a support in the form of tube of decalcified bone, gelatine, macaroni, rubber, etc., appears to me entirely unnecessary, and however easy it may be to sew over them, if the ends be well closed and held, all these methods seem complications."

I think then we may safely say from the foregoing that all present methods of performing circular enterorrhaphy by the introduction of foreign bodies are undesirable, and possess dangers which more than counterbalance any slight advantages which they may appear to contribute by facilitating the performance of the operation.

The other methods, Jobert's and Czerny-Lembert, upon analysis, are likewise found to be far from satisfactory.

Rosenthal, in the paper mentioned above, presents the following table of cases of intestinal resection with end-to end union operated upon since 1880:

For Hernia...........	42 cases with 40.5 per cent. mortality.
For Anus Preternat...	44 cases with 43.2 per cent. mortality.
For Neoplasms.......	28 cases with 46.5 per cent. mortality.
For Intern Incarcer....	21 cases with 48.0 per cent. mortality.
For Wounds..........	16 cases with 37.5 per cent. mortality.
Total...............	151 cases with 42.3 per cent. mortality.

The causes of death are classified as follows:

	Peritonitis.	Collapse.	Inanition.	Shock.	Stenosis.	Intercurrent Diseases.	Total.
Herniæ...........................	11	2	2	1	1	......	17
Anus Preternat......................	11	3	3	......	1	1	19
Neoplasms..........................	4	6	2	.....	.....	.....	12
Intern Incarcer......................	2	7	......	.....	1	......	10
Wounds...........................	6	......	......	......	......	......	6
Total..........................	34	18	7	1	3	1	64

Over fifty per cent. of the deaths were due to peritonitis.

He says: "The frequency of peritonitis was owing to the escape of fæces into the peritoneal cavity, due to the inefficiency of the suture or to fæcal accumulation. That perforation-peritonitis claimed the most victims is a striking proof of the inefficiency of the present methods of intestinal suture."

Most of these cases were done after the Czerny-Lembert method. It will be noticed that about five per cent. of the deaths were due directly to stenosis caused by the turning-in of so much of the ends of the bowel as to occlude its lumen.

In a statistic of seventy-seven cases mentioned by Goetz, three cases, or four per cent., died from the same cause.

Roser lost a patient on whom he had performed resection by the Czerny-Lembert method, and at the autopsy found complete occlusion of the lumen of the bowel. Winiwarten likewise lost a child from the same cause.

Chaput says, regarding the Czerny-Lembert method:

"We find the lumen of the bowel almost entirely closed by the valvular projection. It is a very effectual cause of death." Senn says "That the second row of sutures, in Czerny-Lembert, has often been the cause of gangrene of the inverted margin of the bowel would not be difficult to prove by many post-mortem records."

Jobert's operation is likewise liable to produce stenosis, attention to which has been directed by Madelung, Rosenthal and others. There is as well the danger of mistaking the direction of the bowel, which accident is usually followed by death.

See Senn's Exp. 45. Dog died three days after operation, from perforation-peritonitis. Gut had been accidentally invaginated upward. See also Robinson's experiments.

Madelung's modification of Jobert's operation was intended to obviate this danger, but it increases the danger of stenosis.

It was to avoid this internal spur, with its danger of stenosis, that led Kummer to his "Submucous Resection" and Chaput to his method by "Abrasion and application."

But it is very doubtful if the layers of the human bowel would be so easily separated as those of the thicker gut of the dog, and there is danger of sloughing of the abraded edges from the stitches in Chaput's operation, as has occurred to himself.

The introduction of the dangerous element of sloughing to free the caliber of the bowel, as in Bishop's operation, is, to say the least, undesirable, while Maunsell's slit through the bowel adds an unnecessary complication to his operation.

It is owing, then, to the present acknowledged unsatisfactory state of enterorrhaphy that I feel warranted in presenting for your consideration the following method, which is the result of a year and a half's experiments on dogs, conducted at the Chicago Policlinic.

A loop of bowel is drawn out of as small an opening as possible and protected by sterilized gauze, while its direction is determined in the following manner: The loop is placed in a line parallel with the longitudinal axis of the body and its mesentery drawn tense. The fingers are then slid down its center on one side, and if they pass into the same side of the abdomen, then up is up and down is down; if, however, the mesentery be twisted so that the fingers pass to the opposite side of the abdomen, then up is down and down is up. This is practically the same as the method advised by Mr. Rand in 1883, and I have demonstrated it many times on both dogs and man. The direction having been determined, the loop is gently stripped of its contents and a light elastic or gauze ligature placed above and below. It is then divided transversly, taking care to preserve the mesentery well up to the edge. The distal end of the bowel is now denuded of its mucous membrane for the distance of one and one-half to two centimeters.

Robinson recommends that this be done with curved scissors, but with them there is great danger of snipping a hole through the submucosa which would likely lead to fistula. The mucosa is very soft, like the "pile" of velvet, and is very easily removed by simply scraping it off with a sharp curette. The sub-mucosa is so tough that there is no danger of wounding it. Care should be taken that all the mucosa be removed, but the difference between the soft, pulpy mucosa and the smooth, tough sub-mucosa is so apparent to the eye that there is no difficulty in accomplishing this. The hemorrhage attending this removal

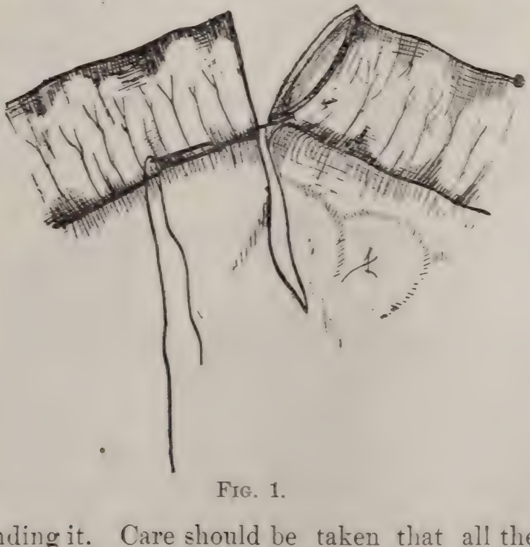

Fig. 1.

is slight and soon ceases. The eversion of the mucosa of the proximal end is overcome by simply dilating it a little as above described.

Next comes the invagination of the proximal into the distal end, and while this procedure is somewhat difficult to describe it is very simple and easy to execute when once seen or understood. Three ordinary round sewing needles of a good length are threaded with fine sterilized silk. The first needle is made to transfix the thickness of the lower or denuded end of the bowel just to one side of the mesentery and at the inner limit of the denudation. It is not drawn clear through, but only until the point projects from the caliber of the bowel a little beyond its free edge. The point of the needle is made to pick up a bit of the other end of the bowel, transversely, just to one side of its mesentery and very near to its edge (Fig. 1). Now, by drawing the needle back a little and using it as a lever by turning it around its point of transfixion in the lower end, it will be readily seen that the upper end on this side, is invaginated into the lower end as far as the part is

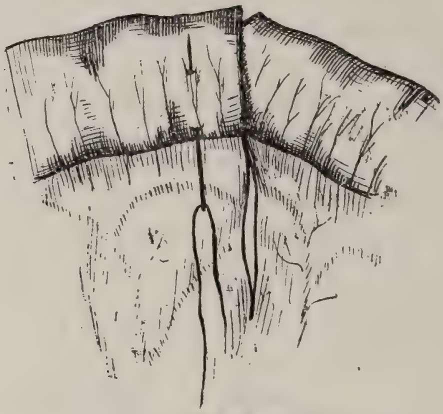

FIG. 2.

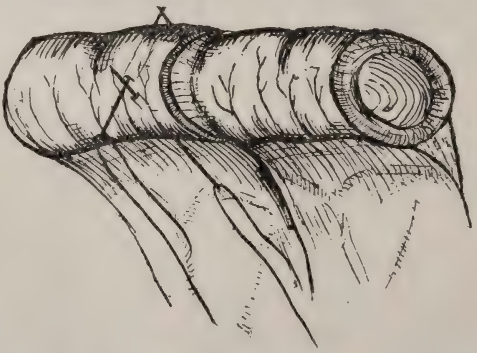

FIG. 3.

denuded of its mucous membrane. The point of the needle is then pushed on through the lower end from within outward a short distance in a line transversely from its first point of entrance, where the needle is left temporarily, transfixing the bowel and holding that part of the upper end invaginated (Fig. 2). The same process is repeated with the second needle at a corresponding point of the bowel on the opposite side of the mesentery, while the third needle is used similarly at the part of the bowel opposite to the mesenteric attachment (Fig. 3).

In case the caliber of the bowel is very large, as for instance in the colon, more than three needles may be used. The needles may now be successfully drawn through and the stitches tied, thereby permanently fixing the invaginated end to the inner limit of the denudation. Or if the bowel is large and rather flabby, the needles may be allowed to remain in until the balance of the stitching is done, thereby contributing firmness and stability to the parts by keeping the bowel dilated and thus facilitating the rapidity of the stitching. By an interrupted suture, taken transversely, the exposed end of the bowel is stitched all around to the invaginated part, care being taken not to penetrate the inner lumen of the bowel. Two or three sutures are then taken on either side of the mesentery, when the operation is complete and the loop returned (Fig. 4). As will be observed, there are two rows of sutures around the bowel, one at either end, thus permanently keeping the opposed surfaces in accurate approximation regardless of the varying caliber of the bowel. It is the first row of sutures around the invaginated end to which the success of the method is due, and it was because Chaput failed to recognize it in his invagination method that his operation was a failure and every one of his animals died.

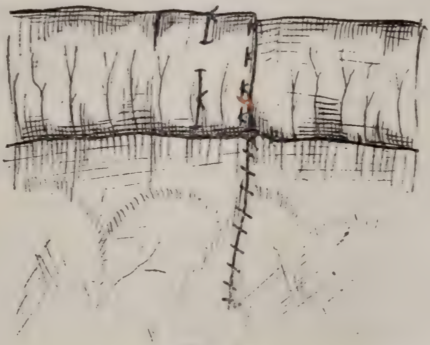
FIG. 4.

There is no danger of the serosa failing to unite with the submucosa. It has always done so, and the specimen which I now present, removed twenty-four hours after the operatian, shows how perfectly, in that short time, the surfaces are agglutinated throughout their whole extent.

While perhaps it is more desirable to invaginate the upper into the lower end, still this is not absolutely necessary, as I have done the operation both ways on the same animal so as to be sure of reversing the direction, and have never noticed any difference in the recovery of the animal nor the appearance of the specimen after.

In case one end of the bowel is larger than the other, it may be reduced to the proper size by Kummer's or Chaput's methods, which leave smooth internal surfaces for the invagination.

It is unnecessary to report in detail each case, as I have done the operation many times, but will state that not a single dog was lost from a failure of any part of the operation. I have kept dogs for several months after being operated upon, they remaining in perfect health and the specimens removed showing no stenosis.

In conclusion I will state that in my opinion the present methods of doing circular enterorrhaphy by the introduction of foreign bodies are dangerous and undesirable ; that the other methods by sutures alone are time-consuming, have been followed by a high mortality rate, and lead to stenosis.

The method here presented is very simple, easy of execution, can be completed in fifteen to twenty minutes with means always at command, and has been attended, in dogs, with uniform success.—*Chicago Medical Recorder.*

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ORIGINAL FRENCH TRANSLATION.

LUPUS.

By Dr. Du Castel, Hôpital Saint Louis. Translated for Gaillard's Medical Journal by H. McS. Gamble, M.D., Moorefield, W. Va.

Gentlemen.—The word lupus, after having been used to designate affections of an absolutely different nature, is at present applied solely to a well defined cutaneous lesion. Now, as Mr. Besnier says, all dermatologists, or nearly all, understand each other when they pronounce the word lupus.

The comprehension of this word does not require a very advanced knowledge of the Latin language, and it is very evident that the first authors who employed it in medicine intended thereby to designate an affection of an evil nature, endowed with profoundly destructive tendencies, worthy in every respect to be compared to that animal, whose essentially evil nature leads him to seek continually something to destroy, and which spends its life *guaerens quem devoret.*

The diseases of the skin to which one may attribute such qualities are many, and the necessity of establishing varieties in the germs has always been felt; so Bazin admitted a syphilitic lupus.

To-day, the immense majority of dermatologists are agreed in restricting the signification of the word lupus and in reserving this qualification to a variety of cutaneous lesions, the greater part of which, if not the entirety, have been demonstrated by the more recent works to be of a tuberculous nature, and the destructive tendency of which is manifested, here by the production of veritable ulcerations, there by the production of cicatricial lesions, not preceded by ulcerations.

In lupus thus understood, two varieties are distinguished; tuberculous lupus and erythematous lupus.

We are going to speak to-day about the first of these varieties. Tuberculous lupus, which M. Besnier designates usually by the name of lupus of Willan, thus desiring to recall the fact that this author was the first who placed in evidence all its peculiarities and who clearly specialized it, is characterized by the production of tubercles upon the skin, the word tubercle being taken in its dermatological and not its histological sense. If this lupus is called tuberculous, it is not, really, because it contains histological tubercles, tuberculous follicles, giant cells, bacilli, but because it is characterized clinically by the presence in the derma of modosities without a tendency to resolution, occupying the deep parts of the derma, of that lesion, in a word, which dermatologists ordinarily designate by the name of tubercle.

Prof. Leloir defines tubercle in the following way: "A neoplasm located in the derma, of an inflammatory nature, not resolutive spontaneously, tending, consequently, to the partial or total destruction of the tissues in which it has been developed, and to the formation of cicatrices by ulceration, by sclerosis, or by interstitial resorption, containing a pathogenic micro-organism." This definition, in part pathogenic, is based upon our present knowledge of the parasitic nature of lepra. The following is the way in which Prof. Leloir applies it to lupus: Lupus is one of the forms of tegumentary tuberculosis, a variety possessing but little virulence (scrofulo-tuberculosis), the elementary lesion of which (lupoma) is, from a dermatological standpoint, a tubercle of very variable size and disposition, of a brownish-red color resembling more or less that of barley sugar (sucre d'orge), and of a soft consistency, evolving generally in a slow manner, chronic, destroying the tissues, it may be by interstitial resorption (lupus non-exedeus), it may be by ulceration (lupus exedeus), or it may be by sclerosis (lupus sclérosé)."

Let us see what this lupoma is, this characteristic tubercle of tuberculous lupus.

The lupous tubercle, superficially situated, is perceived by transparency through the epidermis, above which it often forms a slight projection; it presents itself under the form of a small, rounded, miliary, brilliant, translucid nodule, of a colloid appearance, which is often very pronounced. Its volume does not exceed in numerous cases that of a grain of millet; it may be much smaller and not exceed the dimensions of the head of a little pin, making beneath the epidermis a small bright spot as large as a large grain of sand, but quite distinct, thanks to its color and above all to its brightness and to its quite peculiar transparency.

The color is of a yellowish red, and united to the transparency it gives to the mass an appearance compared, with great reason, to that of barley sugar; this color may veer more or less toward the somber, or approach the tint of copper-red.

The tissue of the tubercle is of great softness, and essentially friable; its slight resistance to laceration is one of its distinctive features; it allows us, when we desire to intervene mechanically in the treatment of tubercle, to appreciate with facility the extent, the limits of the diseased tissue, which its softness and its friability permit of being distinguished at first sight from the sound and resisting tissues in the midst of which tubercle has developed itself.

When several tubercles are united the finger that presses upon their surface recognizes a softness altogether similar to that of fungosities.

The tissue of the tubercle is very vascular; an abundant discharge of blood takes place from its surface the first time it is lacerated by scarification, but a slight compression suffices, in the majority of cases, to arrest the flow of blood. The vascularity of the tubercle is sometimes sufficiently great to give to it an aspect that resembles certain erectile tumors, to such a degree that some authors have described a veritable angiomatous lupus.

The tubercle is not spontaneously the seat of any pain; but pressure exercised upon its location awakens ordinarily painful sensations, which become even very acute in certain patients; this peculiar sensibility may acquire a veritable diagnostic value and permit the discovery by palpation, in the midst of inflamed tissues, with a thickened epithelium, of tubercles that could not be determined *devisu.*

The tubercle may present itself in an isolated state, but, the more frequently it shows itself under the form of little groups, which sometimes contain but a very limited number of tubercles, sometimes form considerable conglomerations which no longer include only four, five or six tubercles, like the preceding, but in which the tubercles become veritably innumerable.

There exists no regularity, no systemization in the disposition, in the arrangement of the lupous lubercles; rare here, numerous elsewhere, collected together in certain cases, scattered in others, they form masses more or less extensive, more or less compact and without any regular and constant shape.

However, by reason of the eccentric extension of the groups, the latter tend to form nummulary masses, in circles, in complete or interrupted rings, with central cicatricial atrophy.

The tuberculous lupous nodule ordinarily pursues an incessant, progressive march, often slow, very slow, but continuous; at the periphery of the nodule the constant development of new tubercles causes the progressive growth of the lupous plague, and, while the periphery extends and invades new regions of the skin, the central parts undergo retrograde modifications.

Every lupous lesion presents, at a certain time, either an atrophic and cicatricial tendency, or an ulcerous and erosive tendency. Every lupus does not present the second; but in all, the first is more or less manifest. It is the rule, when a lupous nodule has existed for a certain time, that we encounter in one or more points of its extent, chiefly in its central portions, cicatricial plagues more or less manifest, but always very sensible. The tubercles first developed diminish, their elements are atrophied; at their location, the epidermis wrinkles, exfoliates, desquamates, and a small cicatricial depression is produced at this point.

This retrograde tendency of lupous tissue is a phenomenon of the first importance; in proportion that the periphery of a plague extends and new regions are invaded, the central parts, primarily attacked, undergo a retrograde metamorphosis, bordering sometimes upon a veritable ulceration, sometimes upon a primary cicatricial atrophy without a preparatory ulceration, so that in every lupous plague having a little age, it is always possible to discover, by the side of the clearly marked yellow tissue, a more or less extensive, a more or less important cicatricial region. This cicatricial plague becomes of capital importance for the establishment of the diagnosis in those cases in which the young and active zone, imperfectly characterized, leaves some doubts in the mind as to the nature of the affection. If the tubercle is the fundamental characteristic lesion, the cicatrice and the ulceration are the expression of the eminently destructive tendency, characteristic of the disease, of that tendency that has given to it the name of lupus. In many a case in which the tubercle does not clearly manifest itself, the cicatrice serves to establish the diagnosis. Thus it is, sometimes upon one, sometimes upon the other of these elements, nodule, tubercle, on the one hand, cicatrice on the other, that we base our opinion in affirming the existence of lupus.

The lupus, denominated tuberculous, because it is characterized clinically by the tuberculous nodule which we have just discussed, is also tuberculous, in the histological sense of the word; it combines all the characters which by common consent are regarded to-day as conclusive of tuberculous affections. In the proportion that the characteristic of tuberculosis changes, progresses and is perfected, one always recognizes in tuberculous lupus the lesion requisite in order that it shall merit the qualification of tuberculous.

If the giant cell is regarded, with Shüpell, as the condition *sine qua non* of every tuberculous affection, we recognize it in the tissue of lupus; Friedlander shows the importance of the tuberculous follicle for the definition of the local tuberculosis; one is not long in demonstrating the frequency of this follicle in the lesions of lupus, which, in that way again, affirms its tuberculous nature. Finally, in 1888, Koch established the presence, in tuberculous lesions, of a special parasite, a microbe of bacillary form. This discovery is capital in importance; for, if the giant cell, the tuberculous follicle, may be encountered in a certain number of lesions, syphilitic lesions, farcinous lesions, simple chronic ulcers, etc., the non-tuberculous nature of which cannot be disputed and do not constitute a certain anatomical characteristic of tuberculosis, the bacillus, so far, is considered as the incontestable evidence of it. The search for it in lupus was not fortunate in the hands of the earlier observers, who were unable to determine its existence; but no great length of time passed before a few positive observations were published, and now the examples of it cannot be counted.

The bacillus of Koch has been found in a goodly number of cases o. lupus. Pfeiffer, Doutrelepont, Demme, Schuchardt and Krause, Cornil and Leloir and Koch have reported positive facts and cases.

By the side of these positive facts we might refer to a certain number of negative ones, but the latter possess no great value. The bacillus is rare in lupous tissue, and, in order to discover it, a great deal of patience and a prolonged examination are necessary; when we see Koch, himself, obliged to examine as many as 43 sections before finding a bacillus, we may ask if, in the cases reported as negative, the patience of the observer was sufficiently persevering or if fortune has treated him badly, for it is impossible to conceal the fact that luck is sometimes necessary to avoid overlooking the tubercle bacillus when searching for it in a tissue in which it shows itself in such small numbers as in lupous tissue.

The dominant feature of tuberculous lesions is that of being inoculable; of provoking in the rabbit, in the guinea-pig especially, an explosion of a local or general tuberculous affection. Does lupus possess this property? Here, until the discovery of the bacillus, was the tuberculous nature of lupus still farther from being affirmed in the earlier investigations. The first attempts at inoculation remained fruitless, and one might believe, after the researches of observers like Kiener, E. Vidal, Leloir and Cornil, that the animals were refractory to the inoculations of lupous tissue. But, with the advance of science, the positive results obtained by H. Martin and Profs. Cornil and Leloir came to show that if the inoculations do not succeed easily, it is always possible to obtain positive results by inoculating the lupic matter into the peritoneum of the guinea-pig or the eye of the rabbit. The following, moreover, are the terms in which Prof. Leloir, one of the authors who have been most interested in the question of the inoculability of lupic tissues, sets forth the present status of the question: "As I have always insisted ever since my communication of 1882 to the Society of Biology, the choice of the animal and of the region and the operatory technique have a great importance from the standpoint of the comprehension of the results obtained by inoculating scrofulo-tuberculous products.

"As I have demonstrated in a number of works made public upon this subject, it is necessary, when we wish to inoculate scrofulo-tuberculous products, especially lupus, to employ the guinea-pig and to inoculate this animal after the intra-peritoneal method or after my mixed method (hypodermo-epiploic), which permits of obtaining a hypodermic local tuberculosis that ultimately becomes general. If it is desirable to make use of the rabbit, this animal must be inoculated in the anterior chamber of the eye."

An accidental occurrence in experimentation has in effect led Prof. Leloir to the discovery of a method of grafting which permits of obtaining, in the guinea pig, an almost certain success even after inoculation of the tuberculous matter into the hypodermic tissue. In two guinea-pigs, in which the intra-peritoneal inoculation had met with poor success, the skin having been badly sutured, the fragment of lupus escaped from the abdominal cavity and came to locate itself between the incised muscles of the abdominal wall, under the skin, with a portion of hernial epiploön that adhered to it. Complete cicatrization of the skin took place in eight days. Two months afterward there was developed, about the point of inoculation, a flattened tumor, broad as a piece of two sous, more than a centimeter in thickness, imbedded in the skin and recalling by its consistence a gumma in the state of crudity. The tumors ended by becoming ulcerated at the center; these ulcerations were grayish, lardaceous, of little depth, broad as a ten-sou piece, and presented a great analogy with a strumous gumma of the derma superficially ulcerated. Upon section, they resembled very closely, from a histological point of view, a section of lupus. Inspired by this observation, Prof. Leloir has succeeded several times in making the lupus take under the skin by uniting a piece of epiploön to the inoculated fragment. He has succeeded in this way in reproducing a form of localized subcutaneous tuberculosis in which he was able to demonstrate the presence of the bacillus.

Let us return to the exposition of Prof. Leloir:

"As I have strongly insisted since 1884, it is necessary to be careful," he writes, "to inoculate not small, but large pieces. I have in fact proven that the negative results obtained by inoculating portions of lupous tissue proceeded from the fact that the piece was too small. There is nothing to be surprised at if we take into account the minute quantity of bacilli that is ordinarily found in common lupus. It is very easy to understand that, in inoculating a large piece of lupus, there will be more chances of inoculating a great number of the agents of tuberculosis. Hence the question seems to resolve itself into an affair of quantity of virus (little for scrofulo-tuberculosis, much for frank-tuberculosis) and not into an affair of less virulence of the bacillus of Koch.

"However, it is not absolutely certain, in the present state of science, that there is not also a difference of quality of less virulence.

"My experiments led me to consider the scrofulo-tuberculous gumma (dermic, hypodermic and ganglionary) as tuberculous products more virulent than lupus although less virulent than true tuberculosis. In effect, when we inoculate parcels of gumma into the peritoneum of guinea-pigs, as a general thing we obtain a generalized tuberculosis more rapidly than when we inoculate lupus.

"On the other hand, as Villemin, Colas (of Lille), Sannelongue, Koch, etc., have demonstrated, these scrofulo-tuberculous gummo are inoculable frequently in the hypodermic tissue of the guinea-pig and even in that of the rabbit.

"Tegumentary tuberculosis might then from the standpoint of virulence be classed thus in following an increasing progression, of which lupus would be the least virulent expression, and frank tuberculosis of the mucous membranes and of the skin the most virulent: Lupus; the tegumentary scrofulo-tuberculous gumma; true tuberculosis of the integuments.

"To sum up, lupus produces in the rabbit and the guinea-pig, when inoculated into the appropriate medium (the peritoneum of the guinea-pig, the anterior chamber of the eye of the rabbit), an incontestable tuberculosis, as the consecutive inoculations and the discovery of bacilli testify.

"One cannot, then, as far as concerns lupus, distinguish this scrofulo-tuberculous product from those of frank tuberculosis by saying that it is not inoculable in the rabbit but is inoculable into the hypoderma of the guinea-pig.

"But this tuberculosis possesses little virulence, since it cannot take either in the rabbit or the guinea-pig, in a medium in which frank tuberculosis ordinarily takes, that is to say in the hypoderma.

"Still more, nothwithstanding its admission into the animal (peritoneum of the guinea-pig), this tuberculosis is increased in virulence only with great difficulty. There exists, therefore, between frank tuberculosis and the scrofulo-tuberculosis of lupus, a very pronounced difference. Frank tuberculosis takes everywhere, in general, as the works of Villemin, Chauveau, Conhiem, Arloing, Koch, Verneuil and Babès have shown. Lupus only takes in certain appropriate media.

"Lupus is, therefore, a local tuberculosis. But this variety of tuberculosis presents something of a special character. In fact, it does not succeed in tuberculizing the rabbit unless this animal is inoculated in the anterior chamber of the eye. It does not succeed in tuberculizing the guinea-pig unless this animal is inoculated in the peritoneum, or according to my dermo-epiploic method.

"Beside, in order to succeed, it is necessary to inoculate large pieces of lupus.

"Finally, this tuberculosis consecutive to the inoculation of lupus products evolves slowly.

"Lupus ought, therefore, to be considered as a tegumentary tuberculosis of little virulence, poor in pathogenic organs, in general distinct from common tuberculosis, and classic because of its special features, which may be summed up as follows:

"1st. The small number of bacilli.

"2d. The necessity of inoculating large pieces.

"3d. The necessity of inoculating in a favorable medium.

"4th. The necessity of inoculating a favorable animal.

"5th. Slowness of the infection of the animal.

"Do these special characters, this small degree of virulence of the variety of tegumentary tuberculosis designated by the name of common lupus, depend solely, as I wrote in 1883, and as ulteriorly Noearn said, upon the fact that lupus contains but a small number of bacilli? Must it be admitted, on the contrary, as Arloing seems to think, that the scrofulo-tuberculosis, of which lupus is one of the branches, is produced by a special virus or at least distinct from the ordinary tuberculous virus in its quality of virulence?

"The cases that I have observed lead me rather to admit that, in the present state of science, lupus ought to be regarded as a tuberculosis of little virulence, but essentially as a tuberculosis."

We see, in proportion as the knowledge of the lesions that characterize a tuberculous affection is perfected, that it becomes more precise; in proportion also does the tuberculous nature of common lupus, of the lupus of Willan, reveal itself more incontestably, is affirmed to a greater degree; thus pathological anatomy and physiology unite to confirm, to demonstrate the truth, the correctness of the opinion that our teachers in the hospitals, MM. Vidal, Ern. Besnier, previously maintained on clinical grounds. But lupus appears to occupy in the scale of tuberculosis an altogether inferior position, as my teacher E. Vidal remarked before the Societé Médicale des hôpitaux, when he proclaimed that tuberculosis par excellence of the skin was ulcerous tuberculosis. Prof. Leloir, as we have just seen, recognizes in tuberculosis of the skin three types of ascending virulence.

In lupus a moderate amplification enables one to verify the thickening of the derma and the presence in its thickness of small disseminated yellowish masses, corresponding to the centers of the microscopical nodules. Trains of embryonary cells exist along the vessels and the glandular conduits. The dimensions of the inter-papillary depressions are notably increased, and their depth is considerably augmented. The papillary elevations of the skin appear exaggerated. The aspect of these elements thus modified sometimes gives to the section forms presenting great analogies with those of cylindrical epithelium.

The rounded, yellowish, transparent masses, the color of sucre d'orge, which correspond to the tuberculous nodules, may be seen in the entire thickness of the derma, and even in the hypoderma. A strong amplification permits us to discover therein the presence of tuberculous follicles clearly characterized and particularly rich in giant cells. The caseous degeneration of these elements is the route that leads to the ulceration of lupus. The rete malpighii, the corpus mucosum and the corneous layer present in the earlier stage of the lesion but a slight degree of thickening. When ulceration is upon the point of taking place, the granular layer of the epidermis undergoes caseous degeneration, the epidermis becomes thin and desquamates.

The tuberculous follicle is constituted by its three groups of characteristic elements: The giant cell in the centre; further out, the epithelioid cells; still further out, the lymphoid cells, which constitute the zone of invasion.

In the skin attacked with lupus, as in the organs, it is in the region of the thinnest capillary plexuses of those which surround the glands that the nodules commence, accumulate and appear the more distinctly; thence the tuberculous inflammation extends and invades the adjoining connective tissue, following in preference the immediate vicinity, the lymphatic sheath of the vessels. So we often see attention called by authors to the presence of tuberculous follicles around the pileous follicles, the sebaceous glands and the sweat glands to the accumulation of embryonary cells along the external wall of the blood-vessels.

The lupic tubercle may occupy variable points in the depth of the derma; it may be met with in the most superficial parts of the papillary layer; it may be situated in the entire thickness of the derma and even in the hypodermic tissue.

The tuberculous nodule constitutes the fundamental clinical lesion of ordinary lupus, of which it is the initial lesion. It often also appears very distinct in old cicatrices; it remains manifest during the whole course of the morbid evolution in a certain number of cases, and then the diagnosis of the disease is most easy. But it is far from being constantly thus. Quite frequently the tubercle escapes our observation; it may be that developed in the depths of derma; it is found obscured at its commencement by the depth itself of the situation which it occupies in the skin, or again, it may be that it is marked by the concomitant lesions that have supervened in the skin. It is usual, in fact, that a certain number of reactional lesions are developed in the skin at the same time as the tubercle, such as inflammatory infiltration or infiltration of a tuberculous nature, colloid infiltration, elephantiasic thickening of the skin, pityriasiform or psoriasiform epithelial alterations, impetigoid or acneiform lesions, ulcerations with crusts, papilliform vegetations, torneous thickening of the epidermis, acute or chronic œdemas, the tubercle may be lost in the midst of these different lesions and the diagnosis is rendered difficult.

From the importance of these different lesions from their multiple combinations a certain member of forms of lupus result; the accentuation of the ulcerous and cicatricial atrophic tendencies comes to modify the aspect still more. The ulcerous tendency in particular is a considerable element in the history of lupus, and in the determination of its forms, in which there is ground for the establishment of two very dissimilar branches, lupus of ulcerous tendency, or exedeus and lupus without ulcerous tendency, or lupus non exedeus, and then come the varieties plane, vegetative, hypertrophic and exfoliative.

(*To be continued.*)

SELECTIONS.

GASTRO-ENTEROSTOMY: A MODIFICATION OF SENN'S METHOD.

By F. T. PAUL, F.R.C.S., Surgeon to the Liverpool Royal Infirmary.[1]

MR. PRESIDENT AND GENTLEMEN: In September, 1887, Professor Senn, at the Washington Meeting of the International Medical Congress, read a paper entitled, "An Experimental Contribution to Intestinal Surgery, with Special Reference to the Treatment of Intestinal Obstruction." In 1889 he published this, with other papers, in his now well-known work on Intestinal Surgery—a part of the preface to which reads: "One of the principal objects in publishing these papers in book form is a desire to stimulate the young men in our profession to enter the field of original investigation, as the author is firmly convinced that experimental research constitutes the shortest and safest route to the perfection of the principles and practice of intestinal surgery." The wish expressed in this paragraph has certainly been fulfilled, for not only has the publication of Senn's work marked an era in this branch of surgery, but it has been the direct stimulant for several fresh investigations. Unfortunately, in this country the obstructions placed in the way of those desiring to advance along the path of original investigation, involving experiments upon animals, are many and grievous, and are not without support from members of our own body. Indeed, I have been told in this institution that I ought not to have performed these experiments upon dogs, but that if such an operation were desirable it should at once have been done upon a human being. It is not likely that men of minds so constituted would hesitate to put their views into practice; and thus it is more than probable that law and sentiment combined have in some instances changed the ground rather than abolished the experiments—certainly the least desirable outcome of anti-vivisection legislation.

In submitting to you the results of five operations on dogs for the establishment of a permanent fistulous communication between the stomach and intestine, I hope that, whether you consider the method an advance or not, you will at least find nothing to disapprove in the theory or practice of the experiments.

Previous to Senn's paper the operation of gastro-enterostomy was a prolonged process of careful suturing, and was extremely fatal. The bone-plate method has changed all this; it is now neither long nor very fatal. Most of the recorded operations must have been first experiences, and still the immediate results are very encouraging. It has been clearly demonstrated that an inosculation between bowel and stomach may be established, even in debilitated subjects, without any very great risk to life. This is the important point. It is quite true that in a rather large proportion of the cases the symptoms have recurred, and that this recurrence has been due to a subsequent closure of the new opening. But having once learned the secret of a safe operation, it is surely only a matter of detail to make the results obtained more permanent, and it is such a modification that I desire to submit to you this evening.

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[1] Read at the Liverpool Medical Institution, April 28, 1892.

In the first place, has the failure been due to an imperfect feature in the operation, or to its imperfect performance? It occurred in the original experiments, as well as in the subsequent repetitions on the human subject, and Senn's explanation has been generally accepted and frequently repeated—namely, that the orifice in the bone-plates has been too small, or the lateral sutures have not been passed sufficiently near the margins of the wound.

Now, Senn only records four experiments. Of these, one dog died, from causes indirectly connected with the operation, on the day following. Another was killed on the seventh day. Hence the first two have little or no bearing on the question of the permanence of the opening. The third was killed on the thirty-fourth day, and the new opening was large enough to admit the index finger; the fourth on the fourteenth day, and the opening was entirely closed. Thus these few experiments by the original operator leave the question undecided. Mr. Bowerman Jessett records two experiments in which he repeated Senn's operation, killing one dog in three weeks and the other in a month after, with the result that water passed freely through the opening in each case, but the size of the opening is not stated.

Gastro-enterostomy by Senn's method has been performed six times in this neighborhood on the human subject, and I have seen the specimen in five cases. Three did not live sufficiently long to help in deciding this matter. Of the other three, Mr. Stansfield operated on a male, aged fifty-three, suffering from malignant obstruction of the pylorus. The symptoms were relieved for about two months, then recurred in all their original severity, and on death taking place two months subsequently the opening was found entirely closed. Mr. Larkin had a similar experience, symptoms of closure occurring about the same length of time after the operation, and the condition verified by post-mortem examination. I also have reported a case in which the symptoms recurred after some weeks; and though the aperture had not altogether healed, it had contracted to something like a third the original size, and the patient only lived a little more than two months after the operation. Dr. George Beatson records a case in which death took place four weeks after operation, at which time the opening only just admitted the index finger, and which had therefore probably contracted to half its original size. Mr. Mayo Robson mentions a case the exact counterpart of Messrs. Stansfield and Larkin's, and in which, though no post-portem was obtained, there can be no doubt closure took place somewhere about the eight week. Mr. Kilner Clark records a sudden closure on the twelfth day, but that was probably of an accidental character.

Enough has been said, I think, to prove that Senn's explanation of the closure of the artificial opening in gastro-enterostomy is not the correct one. Were the bone-plates or the suturing in fault the orifice would close sooner. Experience seems to show that the inosculation is at first quite satisfactory, and the opening remains for some weeks sufficiently free; then it slowly undergoes contraction, and the symptoms of obstruction are re-established. I cannot help thinking that the cause of this late contraction is at least sometimes to be found in a relaxation of the strictured pylorus. When the new opening gives a sudden relief to the stomach, a constant source of irritation to the cancer subsides, and it not unfrequently shrinks in consequence, thus lessening the amount of obstruction. The same condition has often been observed in cases of malignant stricture of the rectum and colon. After lumbar colotomy for complete obstruction, it has been no unusual experience to find fæces shortly passing by the rectum again quite freely.

If the fault does not lie in the operator, it most be in some detail of the operation, and that detail I believe to be the character of the opening made. It is a short, clean incision, involving no loss of tissue. So long as there is no other outlet it remains patent; but no sooner does the pylorus relax than the artificial opening begins to contract.

Another decided drawback to the common method of performing gastro-enterostomy is the necessity of bringing the jejunum across the transverse colon. In my case it certainly produced a condition of partial obstruction which was very troublesome to the patient, causing flatus to collect in the large bowel. This objection has been met in two ways. One is to tear through the transverse meso-colon and gastro-colic omentum, and bring the jejunum through this opening to the front of the stomach. The other is to turn the whole stomach up, and attach the intestine to the back instead of the front surface of it. The former plan has sometimes resulted in obstruction of the bowels from kinking, and the latter is a very difficult and sometimes impossible operation to perform.

Having pointed out wherein I believe the operation devised by Senn to be liable to fail, I beg now to direct your attention to the modification which I have found to procure a perfectly satisfactory and permanent opening, in the best and most convenient position. The plan I am about to describe strangulates the connected surfaces of the stomach and intestine, effecting by sloughing a clean circular opening between the bowel and the back of the stomach, which, as far as I am able to judge from experiments on dogs, shows no tendency whatever to contract.

The special apparatus required involves nothing more than a hard ring, preferably of bone, about $\frac{3}{4}$-inch in diameter for human intestine, and perforated with four small equidistant holes. The ring may be rounded on all sides or only on one, as shown in the diagram (Fig. 1); this edge should always be round, in order that it may not cut the piece out too sharply, and lessen the breadth of surrounding adhesions. The four holes are charged each with a needle carrying a strong double silk thread, *very securely* double knotted on the other side. For dogs I used rings of $\frac{1}{2}$-inch diameter, and generally tied the ligatures over a second ring, though I subsequently found that this was not necessary.

The operation is performed as follows: The abdomen is opened, and the first part of the jejunum found and brought out of the wound in the usual way. A small incision is made into the bowel where it can be applied to the lower and back part of the stomach without the least tension. Through this small wound the bone-ring is slipped into the bowel, the needles passed and the opening temporarily closed.

Next a cut of about $1\frac{1}{4}$ inches in length is made in the front wall of the stomach opposite to the spot where the inosculation is desired, and the four needles are passed in *regular order* through the transverse mesocolon and posterior wall of the stomach, and brought out of the front opening. When they are drawn tight, of course the intestine is firmly applied to the back of the stomach, and by cutting off the needles and tying the ligatures tightly, the included disks of bowel and stomach are strangulated between the ring in the former and the ligatures in the latter. While the parts are still held forward with the ligatures, the center of this area may be cut out with a tenotomy knife, thus at once effecting a communication between the two viscera. Then the ligatures are cut short, the parts allowed to drop back into position, and the opening in the front of the stomach closed by a double row of fine green catgut sutures, a continuous row in the mucous membrane, and Lembert sutures in the outer coats.

Finally the stomach is turned up, if possible, and a few Lembert sutures applied on the outskirts of the inosculation to retain the parts in position when they lose the support of the ligatures by sloughing on the second day. These sutures are much more important in this than in Senn's operation; but if they cannot be used owing to fixation of the organ by cancerous infiltration,—and it must be a very bad case in which none can be passed,—the patient should be kept very still for at least a week. Such additional support is much less urgently needed when the intestine is applied to the back than when it is applied to the front of the stomach, as the tension in the former case is much less; but it should never be neglected.

Experiments.—The experiments were all performed upon mongrel terriers about the size of an ordinary fox-terrier, and the bowel used was that which was lying nearest to the posterior and lower region of the middle of the stomach at the time.

(1) In this case two rings ½-inch in diameter were used, one in the intestine, the other in the stomach. No Lembert sutures were applied round the inosculation. The animal suffered very little from the operation, taking his food well all the time. He was kept on bread and milk for about a week, and subsequently on ordinary diet. The bone-rings, slightly digested, were passed on the fourth day, in the second motion since the operation. Killed on the 31st day. The opening was circular and free, but its size was not estimated until after the parts had been hardened in strong spirit, when it only measured ⅓-inch in diameter. The incision in the front of the stomach could scarcely be detected, and there were hardly any peritoneal adhesions except those concerned in the gastro-enterostomy.

(2) The proceedings were here reversed, the first ring being inserted into the front of the stomach, and the ligatures tied over a second ring in the duodenum, through an opening on its opposite side. There was a little tension on the parts, but no supporting Lembert sutures were put in. The dog did very well for twenty-four hours, then seemed rather uneasy, and the following morning was found dead. An examination showed that the heavy duodenum—it is very thick in the dog—had partly broken through the fresh adhesions round the slough, and permitted a fatal extravasation. Until this case I had not rounded off the outer edge of the rings, nor used surrounding sutures. After it I adopted both, but did not repeat the operation on the front of the stomach, as everything was more favorable for the opposite position.

(3) The operation was performed as in the first case, but with the two precautions suggested by the last. The dog did well throughout, and was not killed until the 107th day. He had increased in weight. The opening was found to have been made between the back of the stomach near the pylorus and the top of the colon. It readily admitted a half-inch test tube, thus showing that in this long period it had under-

gone no contraction, for the outside diameter of the bone-rings used was half a inch. This case is especially valuable, because it is almost certain that the new opening must have been quite functionless, and still did not contract. Had food passed through it into the colon, nutrition would have suffered; and had fæces escaped by it into the stomach, vomiting, as shown by the next case, would have occurred.

(4) The same operation was repeated. He was stronger than any at first, and passed the rings on the fourth day. After about a week he began suddenly to throw up yellow vomit, and later on fæcal vomiting became so severe that he wasted rapidly, and I had him killed on the twenty-second day. On examination a larger opening than in the last case existed ($\frac{5}{8}$-inch rings were used) between the back of the middle part of the stomach and the middle part of the small intestine. There was no constriction whatever, as the specimen shows, in the intestinal canal, but it was apparently easier for liquid fæces to flow back into the stomach than to continue onward in the bowel. Food had evidently passed out of the stomach by the pylorus, short-circuited back by the new opening, and then been regurgitated. The mucous membrane of the stomach was a good deal inflamed, owing, no doubt, to the irritation of fæcal matter. The course of the case is the best proof of the extremely free nature of the opening. It is unnecessary to point out that, for obvious reasons, such untoward results could not occur when the upper part of the intestine was selected, nor when the pylorus was strictured.

(5) The same operation, using only one ring, the ligatures being tied in the stomach on the bare mucous membrane. The ring was carefully sought for in the motions, but never found, so was probably digested. He recovered as well as usual, except for a short attack of fæcal vomiting; but on the twenty-fourth day accidentally got hold of some poison in my laboratory which is used for practical toxicology, and seemed so ill that I had him killed with chloroform. At the post-mortem I found the same clean circular opening, measuring a full half-inch in diameter, at about the same position of the bowel as in the last case.

From these cases I think I am justified in assuming—(1) That the operation of gastro-enterostomy performed in this way with due precautions is as safe as with the decalcified bone-plates. (2) That the new opening is in a better position. (3) That it will not spontaneously close. And (4) that it involves no unnatural displacement of the bowel in applying it to the stomach.

I have no desire to claim for this proceeding that it is anything more than a modification of Senn's operation, and the idea of working through an accessory opening I obtained from Dr. Maunsell's paper on resection of the intestine, published in the Transactions of the Intercolonial Medical Congress of Australia for 1889.

Should experience in the human subject show this to be a more dangerous proceeding than Senn's, it might still be utilized as a method of attaching the intestine to the *back* of the stomach by means of his decalcified bone-plates —a difficult and often impossible process to accomplish with safety by his method of operating.

It was suggested at the Institution that the results of the experiments would have been more reliable had the pylorus been occulted at the same time. Without admitting this, as I think a functionless opening much more likely to close than one in constant use, on May 17 I excised a crescentic portion of duodenum near the pylorus, leaving a track which would just about admit a probe, and then connected with the next part of the duodenum with the back of the pyloric end of the stomach. This operation was a very severe one, and the dog was seriously ill for about ten days, when he began to recover, and is doing well up to the present. There is, so far, no obstruction between the stomach and intestine, though it is certain that all food must be passing by the new opening.—*Liverpool Medico-Chirurgical Journal.*

BLOOD IN THE URINE—HOW TO DISCOVER ITS SOURCE AND WHAT TO DO FOR IT.[1]

By L. Bolton Bangs, M.D., Surgeon to St. Luke's and Charity Hospitals; Consulting Surgeon to the M. E. Hospital, Brooklyn; Professor of Genito-Urinary Surgery and Venereal Diseases in the Post-Graduate Medical School and Hospital.

At the outset of this discussion I assume that the term "blood in the urine" refers to the presence in the urine of normal or intact blood-disks, and that no reference is to be made to that pathological condition know as hæmoglobinuria, or hæmatinuria. This condition, in which the corpuscles become dissolved in the blood, the hæmoglobin thus set free being excreted by the kidneys, is occasionally met with, but belongs to medical practice (strictly speaking) and is not pertinent to our subject. It must also be premised that blood in the urine is but one symptom, and may occur in many different pathological conditions. It is usually associated with other symptoms, but its mere presence is not diagnostic of any particular lesion, nor do its characteristics determine definitely from which part of the genito-urinary tract it exudes. It is true that it is often the first symptom for which treatment is sought, and although it may be the most dangerous, it is not necessarily the most diagnostic one. We must still remember that although the hæmaturia may be the most prominent symptom, is but one of a group. The blood in the urine is but one of the factors in the diagnosis of its cause. In quantity it may vary from a few drops to a very great volume, enough to jeopardize the life of the subject, and it may be persistent, continuously present, or intermittent. When intermittent, the intervals may be from a few days to several years. In my opinion neither its color nor its quantity will enable us to decide definitely whence it comes. Writers have declared that when the blood in the urine is bright red in color it indicated hemorrhage from the bladder; and when it was blackish or deeply intermingled with the urine, it indicated renal hemorrhage. But in my observation the color alone does not indicate its source, for in some lesions of the bladder we often have blood which is thoroughly intermingled with the urine, and the latter may be as black or deep in color as the urine which comes from the kidney. And on the other hand, I have seen bright red blood, sufficient in quantity to coagulate in the bladder come from the kidney.

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[1] Read before the Section on Genito-Urinary Surgery of the New York Academy of Medicine, October, 13, 1892.

Blood may find its way into the urine from any of the anatomical divisions of the genito-urinary tract, or from one or more of these divisions at the same time. I believe, from my own observation, that blood in the urine from a source in the urethra may be overlooked. It is not sufficient to say that a "urethrorrhagia," whether from a traumatism or otherwise, is diagnostic in itself, for I have seen a sequel of gonorrhœa in the urethra permit blood to exude which escaped only with urination; nor is it enough to say that blood from the urethra will find its way out in the intervals of urination, and has no relation to the act. Blood can escape from this canal during the act of urination. The physiological action of the urethra may cause blood to escape from a diseased area sufficient in quantity to be commingled with the urine as the latter passes, and there be no appearance of it at any other time. The history of antecedent or present urethritis, and the absence of bladder or kidney symptoms, together with the fact that the blood is comparatively minute in quantity relative to the amount of urine, will lead us to suspect the urethra as the source of the hemorrhage, but the endoscopic tube will make the diagnosis definite. Just here permit me to suggest two cautions which may seem trite and puerile to you, but as I have seen it necessary to eliminate this troublesome symptom, I will remind you that sometimes the tube, when introduced into an inflamed urethra, especially if it be made to enter the membranous or prostatic portions, may press blood out from a hyperæmic locality. Also it must be remembered that in some individuals a granular or subacute urethritis in the bulbous portion of the urethra will so irritate as to cause the frequent and urgent calls to urinate which we are apt to associate with lesions of the posterior urethra or neck of the bladder. Without the use of the tube in such a case we might be led to consider the bladder as the source of the hemorrhage. I think I can appeal to your experience that this has at times puzzled you and obscured your diagnosis. Of course, the treatment of the diseased urethra will in such cases cure the hemorrhage. The diagnosis of hemorrhage from the urethra, in any of its parts, due to traumatism, surgical or otherwise, is determined by its cause and in its treatment is subject to ordinary surgical principles.

That the ureters may furnish blood for admixture with the urine as it traverses these canals there can be no doubt, as any one who has ever witnessed the effect of an impacted calculus will admit; but as the pathological conditions of the ureters are so infrequent and so obscure, I will limit my part of the discussion to the differential diagnosis between bladder and renal hemorrhage.

The answer to the question as to whether the source of the hemorrhage is in the bladder or kidneys is often a very troublesome one. It introduces points of great complexity, and sometimes, indeed, the hemorrhage may be found to be from both the bladder and the kidney. We may say, in general, that hemorrhage from the bladder is much more abundant, more likely to clot, more persistent, and, when intermittent, with shorter intervals than that from the kidney. It is usually associated with some symptom of irritability or inflammation of the bladder, and also with some evidence of a lesion, ascertained by an exploring instrument or by bimanual palpation. The exploring instrument may detect enlargements of or projections from the prostate; it may detect, but not definitely determine the presence of growth from the walls of the bladder, and it may detect the presence of stone or foreign bodies, but minute granulomata, soft papillomata, tubercular ulcers—all of which I have seen in my experience cause free hemorrhage—may entirely elude any instrument guided by the sense of touch. Fortunately, we are now able to bring to our aid another sense. With the cystoscope we are able to see the lesions, and make a differential diagnosis and are able also to determine whether the blood comes from the bladder, kidney or kidneys. But cases will occur in which we can get no help from the latter instrument, or in which it may be necessary to supplement the evidence furnished by it. We sometimes have cases of insidious disease of the bladder which give no objective symptoms other than abundant and dangerous hemorrhage.

I have had a case of (recurrent) papilloma of the bladder in which there was absolutely no symptom until the occurrence of repeated and prostrating hemorrhages. Furthermore, the hemorrhage was so abundant, and the blood was so rapidly and deeply intermingled with the urine, that the cystoscope gave no aid in the diagnosis. In this case the diagnosis was made, first, by determining the fact with the searcher that a foreign body was present upon the right side of the bladder; secondly, that the exploration of the bladder with the searcher increased the hemorrhage, and thirdly, when the bladder was emptied with the catheter and the last portion of its contents allowed to drain into a separate glass, this was noted to be redder in color and to contain more blood than the other portion of the fluid. The bladder was then washed repeatedly with an antiseptic solution, and at no time did the fluid return from the bladder without being tinged with blood. Each time, as the bladder emptied itself, it seemed to drain blood from the neoplasm directly into the catheter, and the last portion of the fluid was always darker than the first. In this case, the incision into the bladder and the removal of the tumor by the suprapubic route of course instantly stopped the hemorrhage.

It has been my experience with the cystoscope, which, in spite of its occasional failures, should be regarded as an instrument of precision, to observe that hemorrhage from the kidney is rarely so rapid and abundant as to obscure the fluid medium in the bladder. Hence, if this does take place, in a given case, it may be regarded as one of the diagnostic points in favor of the lesion being in the bladder. But if the case which is presented for diagnosis has no symptoms of disease of the bladder other than the hæmaturia, it will not do to assume that therefore the blood comes from the kidney. There can be no question that the latter—one or both of them—may supply an enormous quantity of blood, and some times without any particular effect upon the general well being of the subject. Physiological and pathological facts both demonstrate this; but inasmuch as the question of treatment of the symptom involves the removal of the cause, we should carefully, studiously, and in order examine each of the organs from which the blood may come. Associated symptoms give valuable aid in determining the source of the hemorrhage to be in the kidney, and when obscure, or not present at the time of the examination, must be carefully sought for.

Lumbar pain, associated with blood in the urine, is a frequent accompaniment of lesions of the kidney. It may be only vaguely like the intensely severe colic which accompanies the passage of a renal calculus, but especially if it be unilateral and minute clots be found in the urine, it is plainly valuable in locating the lesion. Manual exploration may also reveal in the kidney region the presence of a distinct enlargement or of an indefinite fullness, or of mere tenderness, but I will admit that these signs are not always present and are not easily ascertained. Individuals vary so in the amount of adipose tissue about the kidney that no positive conclusion either way (for or against) can be drawn from the two latter symptoms alone, and it is only as one or both form part of a group that they are valuable. It should be stated here that a movable or floating kidney may be the cause of blood in the urine, and its investigation should not be omitted in a doubtful case. The microscopic examination of the urine which, "it goes without saying," is a matter of course in all genito-urinary cases, gives especially valuable aid in suspected kidney lesions by informing us of the presence of casts, crystalline and granular material, tissue of neoplasms and epithelium. Important differential evidence is furnished by the "catheterism en deux temps," suggested, I believe, by Guyon, with which I suppose all surgeons are familiar, and to which reference has already been made. The fallacy in it, against which we must carefully guard, is that blood may trickle into the bladder from the ureters, coagulate and be delivered at the end of the catheterization, stimulating the bleeding from a vesical neoplasm. I have been led to multiply the washings, and to add the device of pressure over each kidney and ureter in turn between the washings. Thus: The catheter is passed, and the last portion of urine gathered in a separate glass. The color and characteristics of this small quantity are noted, and the glass numbered and set aside for microscopic examination. The bladder is then thoroughly washed, emptied, and the last few drops of the fluid separated in another glass. The bladder is again washed, emptied, and the catheter allowed to remain a few moments, while deep, bimanual pressure is made over (for example) the right kidney and along the course of the right ureter. The fluid, which escapes slowly, and often only in drops, is also gathered in a separate glass and set apart for microscopic examination. The bladder is again washed, and the manœuver repeated with the left kidney and ureter. If the small amount of fluid which is gathered under these circumstances is tinged with blood, the strong probability is that it comes from the kidney, and subsequent microscopic examination of the fluid may convert this probability into certainty. This procedure may not be unfamiliar to you, but I was led to employ it by observing in two cases of pyelo-nephrosis that, after thoroughly washing the bladder, purulent fluid could be made to spurt from the catheter (*in situ*) by pressure over the diseased kidney. I may add that one of these individuals learned the art of emptying his kidney (so to speak) and gained so in well-being that he positively refused operation.

The following somewhat complex case illustrates some of the points, and I beg leave to quote it briefly.

A gentleman, aged forty-six, intermittent attacks of hæmaturia in eight years, lasting a few days at a time. For the past three weeks profuse and persistent hemorrhage. He noticed that the first gush of urine contained bright red blood, then the stream grew darker, and finally became a deep smoky color. No frequency of urination; no pain associated with the act of urination; no lumbar pain; no lumbar enlargements or tenderness. History of urethritis and subsequent attacks of frequent and painful urination. General condition was depreciating. Confinement to the house, and the taking of ergot, etc., made him complain of feeling wretched. Locomotion did not increase the amount of blood, nor cause pain. The introduction of a soft catheter was attended with some difficulty in the posterior urethra, and as it entered the neck of the bladder he complained greatly of pain, and immediately there was a gush of bright red, clotted blood, followed by very dark colored smoky urine. I thought at first that I had to deal with a neoplasm at the neck of the bladder, especially as per rectum there was tenderness and a sense of fullness in this region. The washings, as detailed above, were then undertaken and the drainings of each few moments were always tinged with blood. Microscopic examination of his urine showed free blood, a small amount of pus and epithelium; and of the drainings, free blood and a cast. Treatment of the posterior urethritis, to which the pus could be referred, relieved the pain and difficulty of introducing instruments, and exploration with the cystoscope (more than once) showed a normal bladder and bright red blood exuding from the left ureter. This was evidently in sufficient quantity to coagulate at the base of the bladder and be expelled with the first contraction of the viscus. The presence of a normal bladder, and the absence of signs of abscess, neoplasm (including tuberculosis), or calculus in the kidney or its pelvis, which at the end of eight years ought to be manifesting themselves, led me to consider the cause of this man's hemorrhage as congestion, due possibly to some form of toxæmia. The examination of blood taken from his finger revealed the presence of "plasmodium malariæ" in abundance. All instumentation was stopped and his hemorrhage ceased abruptly under the administration of tincture of hamamelis, followed by quinine.

Of course cases might be multiplied which would indicate the difficulties of diagnosis; but these are familiar to you, and it would only be a waste of time to attract your attention to them.

The second part of the question, namely, "What shall we do for blood in the urine?" is so directly connected with the treatment of its cause that we are immediately led to ascertain upon what pathological condition in the genito-urinary tract its presence depends. Here it must be said that in the time allotted it would be impossible to present these in detail, nor would it be practical, for I think our minds may be led to valuable results by considering the subject in a general way. The question involves often the treatment of the symptom as well as the removal of its cause.

The comparatively small amount of blood which escapes with the urine during an attack of gonorrhœal cystitis is, as a symptom, of little consequence, and it is only neceesary to say to you that the treatment of itself will cure the hæmaturia. But in the old man with prostatic hypertrophy, who is bleeding profusely into his own bladder, the latter, perhaps, distended with clots and urine, and making the most agonizing and violent contractions to expel its contents, the condition is entirely different. Here the shock of the loss of blood is added to by the violence of the suffering, and the question as to what shall be done is an exceedingly delicate one. Sometimes the very act of relieving a retention, and thus putting the bladder at rest, will stop the hemorrhage. Sometimes again, the quieting of the expulsive effort of the bladder by the use of opium (morphia), relieves the congestion (because, as you remember on account of the anatomical arrangement of the vessels of the bladder, the more the bladder contracts, the more blood is retained in its veins) and stops the hemorrhage, and the clots that have accumulated in the bladder, becoming softened by the urine, are expelled in the form of magmata. My own impression is that in these cases catheterization should be avoided as far as possible, for it is in the knowledge of all surgeons that the introduction of infectious material into bloody foci very readily induces decomposition and sets up inflammation which may be far reaching in its effects. Hence catheterization should be done under the most scrupulous antiseptic precautions, and only when it becomes absolutely imperative to relieve the intense suffering of the patient. The question then arises, when the resort to the catheter is imperative, as to what to do with the clots. In some cases I have looked upon the presence of the clots as conservative; that is to say, the pressure of the clot, plus the contractile efforts of the bladder, has seemed to control the hemorrhage. But where the bladder is not comforted and quieted by the relief of the retention, and the clots are still present, it is evident that the bladder resents their presence, and of course the expulsive efforts of the bladder, by maintaining the congestion, add to the hemorrhage. The removal of the clots, then, in order to quiet the bladder, is in itself a hæmostatic procedure. I must withhold my approval of the injection of pepsine or peptonizing solutions of any kind into the bladder under such circumstances. Such materials easily decompose. They can scarcely be rendered so aseptic as to not run a very great risk of adding to the bloody contents of the bladder septic material. Hence I prefer to break up the clots either by the aid of some instrument, such as the lithotrite, or by careful and frequent ablution with an antiseptic solution to remove them gradually, or to reduce their volume to such an extent that the bladder itself can expel them, Should the hemorrhage continue and not be controlled by dilute astringent injections, one of the drainage operations, preferably by the perineum, may be undertaken.

The hyperæmia (congestion) of the bladder due to the presence of foreign bodies, including calculi, sometimes causes hæmaturia. It may be modified, and the hemorrhage stopped by rest in bed, careful ablution, and, if need be, the injection of dilute astringents (tannin, 2 to 100; zinc sulph., half grain to the ounce) not strong enough to irritate the bladder and cause its contraction, nor to form clots, until such time as in good judgment the foreign body can be removed.

In the case of neoplasms, whether benign or malignant, it seems to me that we can hardly wait—certainly not for any length of time—to counteract the symptom, for as a rule, when the cases present themselves to us, they are suffering largely from the effect of the loss of blood, that is to say, acute anæmia. In my opinion, good judgment requires that we shall proceed to open the bladder by way of the suprapubic route and remove the neoplasm, if need be with a resection of a portion of the bladder, as speedily as possible.

As to the methods by which foreign bodies, such as calculi, should be removed, I have elsewhere given my opinion, and only refer to them now when they are causes of hæmaturia. When it has been definitely ascertained that the source of the hemorrhage is the kidney, another series of questions is presented to us for solution.

In hæmaturia due to traumatism of the kidney, such as result from falls or blows upon the renal regions, and where the associated symptoms are those of collapse and other evidence of excessive loss of blood in or about the kidney, I would advise unhesitatingly an incision, either lumbar or abdominal, which will give access to the great vessels of the kidney, and ligation of them. Records show the death-rate following traumatism and rupture of the kidney to be very high, and that it is usually due to the loss of blood, and not to the loss or function. It has been demonstrated that the kidney receives a supply of blood, moderate to be sure, from other vessels than the renal artery, sufficient at least to maintain the life of the kidney for a time long enough to enable the other kidney to accommodate itself to the increased demand upon it.

If the history points to the presence of a retained calculus in the kidney, that is to say, recurring lumbar pain, preceded, accompanied or followed by the hæmaturia, and if the cystoscope locates the source of the hemorrhage, a judicious nephrotomy may be done and extraction of the calculus, if possible. It may be proper to say here that it has occurred to me, from failures of my own and from failures I have observed in the practice of colleagues to find stone in the kidney, that a wider incision through the kidney may be with safety and propriety made than I, at least, have been willing to make. Some investigations by F. Legueu[1] fortify me in this belief.

Hæmaturia due to neoplasms or tuberculosis of the kidney presents a question which I think must be determined by the individual cases. Roberts has shown, and with him accord the French observers, that with carcinoma of the kidney the duration of life is just about as long in the cases which have hæmaturia as in those which have not, and I am led to the conclusion that the hemorrhage alone is not a positive indication for a nephrectomy. The growth of the tumor, pain, the danger of infection to the rest of the body, and the possibility of the prolongation of life, provided always that the other kidney is normal, must lead the surgeon to decide whether nephrectomy should be performed or not. I think the same considerations apply to the individual in whom is developing a tubercular kidney. It is an interesting fact that the autopsy rooms show that not only have purulent foci in the kidney, but tubercular ones also, been surrounded by a protective capsule, and the individual passed a moderately comfortable and lengthy existence, somewhat handicapped, to be sure, by a more or less degenerated kidney.—*Medical Record.*

FLAP SPLITTING OPERATION FOR VENTRAL HERNIA.

By H. Meek, M.D., London, Ont.

What I have to say on the subject of ventral hernia will be principally with reference to that form of hernia occurring in cicatrix following abdominal section; and as a forerunner, I shall report a case on which I operated some months ago.

In December, 1890 I removed uterine appendages from a patient suffering from chronic oöphoritis and prolapse of ovaries; abdominal walls were thick and fat, no drainage tube was used, recovery from operation was somewhat retarded by suppuration in track of a couple of sutures on left side. She was in hospital about three weeks after operation, and then went home, but did not move about much for some time. An abdominal belt was worn after wound healed, though not continuously; always wearing a bandage however when not wearing a belt.

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[1] Annales des Maladies des Organes Genito-Urinaire, July, 1891.

About following June she noticed a bulging at lower end and to left of cicatrix. The protrusion increased in size slowly. On my return from Europe in November last she called on me, and on examination I found a ventral hernia in line of cicatrix and to left of it about two and a half inches, in both linear and transverse diameters. The recti had separated along line of incision, for a distance of about two and a half inches. The left rectus appeared to be separated from median line a greater distance than right. The cicatrix had not widened out much. The mass could be pushed back into general peritoneal cavity, but could not be retained in place by any kind of support owing to wide separation of recti muscles low down. After trying to keep protrusion back by means of supporter for a time and failing, I advised operation, to which the patient readily consented.

On January, 17, 1892, after preparation as for laparotomy, I operated in the following way: I made linear incision in line of cicatrix down to sac; after carefully opening sac, adhesions were separated sufficiently to return contents, which were chiefly omental, into general cavity. I then clipped away superfluous sac, and with scissors split inner border of each rectus along whole length of separation to a depth of about halt an inch, making an anterior and a posterior flap; then by means of a Tait perineum needle I passed a row of buried silkworm gut sutures in such a way as to separate the flaps and bring together the broad raw surfaces of muscle thus made, taking care to have the wound perfectly dry and no clots between flaps thus brought together; then carefully drying superficial wound, I united skin and superficial fascia by a superficial row of silkworm gut sutures, thus closing the whole wound completely without drainage.

The operation was performed in as thoroughly an aseptic manner as possible. The dressings and after treatment were the same as after abdominal section for other purposes. Bowels were moved on the fourth day by salines and enema. Patients made a rapid recovery. Temperature never rising to half a degree above normal. I removed superficial sutures on eighth day, the wound having completely healed by first intention. The deep buried sutures were left to take care of themselves. Patient was up at the end of the third week, with a thick solid wall in place of the hole which had marked the site of the hernial protrusion.

It is now nearly six months since the operation. I examined the patient but a short time since, and found the support, as one would naturally expect, a more firm and solid one than that which nature had originally given her.

Eddebohls, in a paper published in the *American Journal of Obstetrics*, May, 1891, has pretty thoroughly ransacked the literature on the subject of ventral hernia. The literature on this subject up to that date was found to be rather scanty.

Very little is said on the subject in the ordinary text books on surgery, either general or special, most of the literature being obtained from the published transactions of gynæcological societies. I suppose the scantiness of the literature on the subject may be accounted for by the fact that the vast majority of cases met with have followed abdominal section, and prior to the last ten or fifteen years, abdominal section was not a frequent operation.

Statistics as to the frequency of hernia following abdominal sections are not easily obtained owing to the difficulty of following cases after operation. Eddebohls puts the frequency in his own cases at about one in thirteen where disastasis of muscles followed, about one in twenty where protrusion followed. This corresponds pretty closely with statistics of my friend Mr. Christopher Martin, assistant to Prof. Lawson Tait, who puts it at about 5 per cent. where small hernia and about 1 per cent. where large bad hernia follows.

I think, taking the same class of cases, hernia will follow less frequently as the experience of the operator increases.

CAUSES.

Line of Incision.—Goodell (*American Syst. Gynæcol.*, page 803 says: I am by no means sure that the subsequent cicatrix would not be firmer and less liable to thin out into a ventral hernia, were the recti muscles incised instead of being avoided."

Tait usually makes his incision down along side of linea alba opening sheath of rectus, but does not attach very great importance to this as a preventive.

I should think incision through lateral abdominal wall outside recti muscles more likely to be followed by hernia than median incision.

Length of Incision.—Mr. Christopher Martin mentions long incision as a cause. Majority of European operators think length of incision has little to do with causation. I think where incision is carried very low down, hernia is more likely to follow.

Method of Suture.—Martin, of Berlin, and Tait think method of suture of little importance. In Hospital Bichat, Paris, peritoneum fascia and skin are usually sutured by three separate rows of suture. Olshausen and Veit of Berlin use three rows of suture, and consider this method of suture of importance.

Many of the New York operators suture in this way. Wylie lays particular stress on getting fascia of recti united evenly by a separate row of buried sutures, and says that for the past three or four years he has had no cases of ventral hernia following his abdominal sections.

There is no doubt about the importance of getting fascia evenly united, whether this is accomplished by one deep row of abdominal sutures or by a separate row of buried sutures. I think, too, where peritoneum is allowed to roll up between muscles close union is prevented, and you get a weaker wall.

Early removal of sutures is a cause of considerable importance. Sutures should be left in till the eighth day, or longer if possible, and for this reason silkworm gut being non-irritating is superior to silk as an abdominal suture.

In a poorly nourished patient on whom I did an exploratory incision finding a retro-peritoneal sarcoma, I removed the abdominal sutures on the seventh day, the wound having apparently healed by first intention; twenty-four hours after the omentum had forced its way out, separating wound in nearly its whole length and when examined was found as a thick mass under the dressings. I tied it off, and again closed wound, the patient luckily going on as if nothing had happened.

Anything interfering with primary union, as stitch hole and mural abscesses which are more apt to occur in very fat abdominal walls, will leave a weak cicatrix, more liable to thin out into hernia. Where the drainage tube is left in for more than three or four days, a weak point in wall would follow.

All cases where pedicle is treated by fixation in abdominal wound, as in hysterectomy, extra-peritoneal, fixation of stump, are particularly liable to be followed by hernia.

In a case where I assisted Dr. Eccles, a very large cyst of kidney was opened and drained, sac was fixed in wound, a discharging sinus continued for several months. A moderate size hernia formed after sinus had completely closed.

Intestinal flatus following operation I consider the main cause in one of my cases. A patient suffering from salpingitis and pelvic peritonitis, from whom I removed intensely adherent appendages, March 7, 1891, began to show symptoms of intestinal obstruction, and in less than forty-eight hours after operation regurgitation from stomach, great distention of abdomen, rapid, weak pulse, running about 150 per minute; very restless. I first tried enema and salines with no effect. I then gave her calomel grs. x, tr. belladonna, m. x., every two hours with nothing else by mouth, except sufficient water to get the dose down stimulants and nutrient enemata being administered by rectum. She took eight doses before any effect; having vomited first dose, she had seventy grs. of calomel, and seventy minims of tr. belladonna in her stomach before the bowels moved. After this they moved pretty freely for a time, but she made an excellent recovery; she continued to be troubled with flatulence, however. I have not seen her since she left the hospital, but had a letter from her last Winter stating that she had been quite well since, except a small lump in line of wound, which, from description, I have no doubt is a ventral hernia.

Whether the neglect to wear an abdominal supporter in all cases for several months after operation, is of much importance as a cause, is a question of dispute. Most operators think it important. Wylie, however, thinks if proper union of wound is obtained, it is not necessary to wear an abdominal supporter after.

The symptoms from which ventral hernia cases suffer are principally disturbances of digestive and nervous systems. Both strangulation and rupture may occur. Eddebohls, in a paper referred to, mentions five cases where death followed operation for relief of strangulated ventral hernia, and two other cases where recovery followed such operation. He also mentions three cases of rupture, so that the possibility of strangulation, though not great, should not be lost sight of.

In the treatment of cases, I think that if the hernia can be replaced, and kept in place by an easily-fitting truss, this, the palliative treatment, may be adopted. Where it cannot be kept in place in this way, or where the patient, from any cause, prefers operation to a truss, it should be operated on for radical cure.

With regard to method of operating in my case, I do not claim anything original with myself in the operation. When with Mr. Tait, last year, I saw him operate in this way, except that he united skin with continuous silk suture instead of silkworm gut. In every other particular the steps in operation were the same. So far as I know, this method of flap-splitting for ventral hernia, and bringing flaps together with buried silkworm gut sutures, and closing the wound without drainage, is original with Tait.

I think the results are more satisfactory, recurrence being almost an impossibility after an operation done in this way than from any other method. Whether the sac should be opened or an extra-peritoneal operation performed as advocated by Eddebohls, will depend on whether the sac can be easily separated from its coverings or not. In the majority of cases I think it cannot. If the skin cicatrix is not spread out much, it need not be dissected out. After opening sac it is not necessary to break up all adhesions of contents. but just enough to get mass back into cavity. If the operation is performed aseptically, and precautions taken that nothing is left in wound to interfere with primary union, there will be no necessity for drainage and the buried sutures will never cause any trouble.

Mr. Tait has operated for the radical cure of ventral hernia many times with no deaths, and without a single instance of recurrence of the hernia. In nearly every case he opens the sac. He never uses drainage of any kind, and considers the operation for the radical cure of ventral hernia an operation attended with scarcely any risk.

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PHARMACY AND THERAPEUTICS.

An Elegant and Efficient Catarrh Powder.

℞. Hydronapthol.	
Boric Acid āā in *fine* powder	ʒ 2
Powdered Camphor-*dry*	gr. 5
Aristol	gr. 8

Mix *fine* powder and add Oil Sassafras.

Eucalyptol āā gtt. 2. Mix well.

Dispense in wide-mouth bottle; to be kept closely stopped when not in use.

Apply with good diffusing powder blower just after the parts have been properly cleansed.

Q. C. Smith, M.D.

Austin, Texas, Sept., 1892.

Aristol.—Nearly all drugs, whether or not originally intended for external use, have been applied at one time or another, to local, exterior traumatisms in the once current belief that "remedies that are good within should be good without." The conspicuous failure of the many attempts to obtain a perfect dressing for suppurative conditions which should be equally good for accidental or operative injuries constitutes an interesting section in the history of surgery. Even the later surgical dressings have, for the most part, proved failures in some essential quality. Some of them possessed an unspeakable odor, others were toxic, many were difficult of application, and a further series, though admirably adapted to a particular surgical requirement, failed as complete surgical dressings. The promptness, for instance, with which Aristol was adopted by practitioners demonstrated the great existing need of an adherent stimulating, safe and effective cicatrizant. The evidence thus far appears to demonstrate that Aristol has not disappointed the profession in any of these particulars.

EXALGIN IN CHOREA.—Dana (*Journ. of Nerv. and Ment. Dis.*, July, 1892) considers that in ordinary chorea this drug has a specific action Commencing with two grains thrice daily, he increases the dose, if necessary, to three grains five times daily, and gives iron after meals. Acute anæmia and cyanosis are the only unpleasant symptoms he has seen to be caused by the exalgin. The average duration of chorea in his cases treated with exalgin and iron has been five weeks.

CHLOROFORM IN CHOLERA.—Desprez describes (*Sem. Med.* September 14, 1892) the treatment which he has employed in cases of cholera since 1864. The indications, according to him, are (1) to destroy the comma bacilli in the digestive tract, and to neutralize their products of secretion ; (2) to subdue the painful spasms of the stomach which make that organ incapable of retaining liquids introduced into it ; (3) to stimulate the functions of the skin which are so closely connected with those of the digestive tube and the kidney ; (4) to introduce into the system, as soon as absorption of them is possible, remedies capable of restoring the normal composition of the blood, and rendering it fluid and fit for circulation through the capillaries. For this purpose he gives the following mixture : ℞ : Chloroform, 1 g.; alcohol, 8 g.; acetate of ammonia, 10 g.; water, 110 g.; syrup of hydrochlorate of morphine, 40 g.; M. One tablespoonful to be taken every half hour till the symptoms are relieved. By way of preventive treatment, Desprez recommends persons who have to be in contact with cholera patients to take several times a day, before and after meals, half a glass of chloroform water (1 to 2 per cent.), sweetened to taste.

OREXIN HYDROCHLORATE.—A. Rizzi (*Gazz. Med. Lombarda*, June 18, 1892) has taken up the study of this drug, which was first introduced to the notice of the profession by Penzoldt in 1891. Many conflicting statements have been made by different observers as to its action, and there has been a strong tendency to disbelieve in the claims originally made for it as a stomachic and aid to digestion. The new research tends once more to encourage the belief that orexin may be of real good in certain cases of failure of appetite. The author has employed the drug first on healthy subjects, and then on those with various gastric derangements. As regards the first class, he found, with Penzoldt, that the drug caused the appearance of a keen sense of hunger, and produced increase both of the secretory energy and of the peristaltic movements of the stomach. In cases of atonic dyspepsia, complicated or not with chlorosis or anæmia, the author seems to have been equally successful with the original introducer, and to have obtained some striking results. He suggests that failure to obtain benefit from the drug has probably in many cases been due either to the unsuitability of the case or to the fact that the specimen of the drug used has not been pure. Gastralgia or hyperæsthesia of the gastric mucous membrane should, however, always be taken as contraindications to the employment of orexin, as in such conditions the drug may by an irritant action do more harm than good. It is recommended that the drug be administered in the form of powder enclosed in wafers, and that its ingestion should be immediately followed by a draught of water or broth in order to prevent the drug from remaining confined to a small part of the stomach and exercising too strong an irritant action there.

Bromide of Strontium and Bromide of Potassium in Epilepsy.—Deny (*Sem. Med.*, August 10, 1892), between December 1, 1891, and July 1st, 1892, treated seven epileptics with bromide of strontium. During that time the seven patients had in all 246 fits. During the corresponding period of 1890–91 they had been treated with bromide of potassium and had 331 fits, being a difference of 85 in favor of the strontium treatment. Both drugs were given in exactly the same doses; bromidism was never observed. One of the patients who derived most benefit from the strontium treatment ceased to suffer from attacks of maniacal excitement to which he was previously subject after each epileptic fit. Deny, therefore, agrees with Fere in thinking bromide of strontium a valuable auxiliary to bromide of potassium in the treatment of epilepsy, and even more effectual than the latter drug in diminishing the number of fits. Vallon, on the other hand, has had to discontinue bromide of strontium in three cases, as it seemed to make the seizures more frequent.

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CLINICAL RECORDS.

A CASE OF UNUNITED FRACTURE OF THE FEMUR.

By William Treacy, M.D., Helena, Montana.

On the 30th of October, 1891, S. Swanson, a Swede, twenty-six years of age, sustained a fracture of the right femur in the lower third. Swanson is a man of more than average intelligence, and was a contractor on the Great Northern extension, twenty-five miles from Kalispell. From him I obtained the following history:

Soon after the accident occurred a proper dressing was applied, consisting of a long side splint with coaptation splints and extension. This dressing remained on for five weeks, and when it was removed by the physician in attendance, no union had taken place. A plaster dressing was at once applied and allowed to remain for ten weeks. When this was removed there was free motion at the seat of fracture, and there was no evidence of callus or any attempt at union. Swanson says that the right leg was about four inches shorter than the left at this time, and that he had constant pain above the knee. He concluded to go to Kalispell, and his leg was bandaged firmly to a long side splint, enabling him to make the journey in a wagon without any great suffering. At Kalispell he was given chloroform, and an effort was made to rub the ends of the bone together, after which a plaster cast was applied. This was removed after remaining on six weeks. When he was examined there was the same degree of motion, with no evidence of union.

He then decided to come to Helena, and arrived at St. John's Hospital on March 12, 1892. On the next afternoon, with the assistance of Dr. Steele and Dr. Barbour, he was given an anæsthetic and examined. The right leg was five and a half-inches shorter than the left. The end of the upper fragment was sharp and directly under the integument; we could not find the lower fragment, and it could not be got into position by extreme extension. We then decided to cut down and ascertain the exact condition. After preparing our patient for an antiseptic operation, an Esmarch bandage was applied in order to render the limb bloodless, and an incision made on the anterior surface of the thigh over the seat of fracture. The upper fragment was easily reached, as it had been forced through the rectus muscle and was only covered by skin and fascia. The lower fragment was not in sight. There was no callus deposited about the upper fragment. The periosteum was dissected back and an inch of bone removed with a narrow-bladed saw. An incision was then made through the rectus muscle, and by extension and flexion we were enabled to bring the end of the lower fragment out through the incision. It had been drawn into the popliteal space by the gastrocnemius muscle. An inch was also removed from the lower fragment and reduction was easily effected. Holes were drilled in the end of each fragment with a Brainerd hand-drill to the medullary canal and a silver wire a tenth of an inch in thickness—sufficiently strong to withstand the action of the muscles of the thigh—was passed through the holes made by the drill, twisted four times, cut short and hammered down on the shaft of the femur to be inclosed by callus. Only one suture was used, and it held the bone, in perfect apposition. No ligatures were needed, as there was very little bleeding. After the removal of the Esmarch bandage blood oozed very freely for some minutes, but the oozing soon subsided after irrigating with a very hot bichloride solution for five minutes. The incision was closed with eight sutures, an inch apart. Heavy braided antiseptic silk, well waxed, was used, and the sutures were passed deep through all the tissues. Three strands of coarse catgut were inserted at each end of the incision, for drainage. Catgut was used for the superficial sutures. An ordinary antiseptic dressing was then applied. Heavy binder's board was molded to the limb, and a long side splint applied without any extension. The temperature was taken morning and evening, and did not rise above 100° F. at any time. There was perfect freedom from pain. The dressing was not disturbed for fifteen days, when the wound was found united throughout without the formation of any pus. Twenty-one days after the operation the long side splint was removed and a plaster bandage inclosing the pelvis applied without disturbing the binder's-board coaptation splints.

It is seven weeks since the operation, and patient has been walking on crutches for ten days, his general condition is greatly improved, he has a good appetite, and is gaining flesh rapidly. His leg will be about two inches short. He has firm union, but has muscular ankylosis at the knee joint, which we may be able to break up hereafter.

BRISTOL GENERAL HOSPITAL.

Aneurysm of Femoral Artery Cured by Digital Pressure. (Under the care of Mr. F. Poole, Landsdown, Senior Surgeon.)

A. B., aged 39, a sailor, was admitted on September 30, 1891, with aneurism of the right common femoral artery. His previous history was good, excepting a suspicion of syphilis. Five months before admission, while lifting a heavy weight, he felt a crick in his right groin, which gave rise to a good deal of pain, but no swelling was noticed for some time. At the end of a month he first noticed a swelling just below Poupart's ligament, and he experienced a sense of coldness and weakness in the leg. He then found some pulsation and an increase in the size of the swelling; the pain also became worse. He went into an infirmary, where he was treated by mechanical pressure, which gave him so much pain that it was only applied for three hours daily. This, he says, was continued for a month without any benefit.

On admission to the Bristol general hospital there was a good deal of œdema and redness of the leg. The tumor, about the size of an egg, occupied the upper part of Scarpa's triangle, having an expansile pulsation, entirely stopped by pressure above. The sac, which was fusiform, was easily emptied. There was some thickening of the tissues outside the sac, which apparently contained no clot. The leg was enveloped in cotton wool, bandaged from the toes to the groin, and elevated on a pillow. He was put on a restricted diet, consisting of two ounces of meat, six ounces of bread, and ½ a pint of milk.

On October 12th, a relay of twelve students having volunteered, digital pressure was commenced on the external iliac artery. Three men took two hours, one compressing the vessel for twenty minutes, another with finger on the tumor to give warning of pulsation. To relieve the operator, a 7 lb. conical weight was suspended on his finger. It was found necessary to administer morphine subcutaneously to procure rest and quiet. At the end of twenty-four hours the sac was found to be harder. The pressure was continued for forty-eight hours, when the pulsation was found to be materially diminished, and to have lost its expansile character, the tumor was smaller and more solid. A pad of cotton wool was applied over it with a splice bandage, the leg being elevated and enveloped in wool.

On October 15th there was a superficial wave through the aneurism, which the slightest pressure on the surface of the tumor entirely stopped. The foot, which had felt numbed on the previous day, was more comfortable. In the course of a few days the pulsation entirely ceased. The tumor being smaller and harder on November 2d, he was allowed to get up for a short time, and being quite well was sent home on November 4th.

Not having heard from him since, it is presumed that the cure was permanent.

CRANIECTOMY.

At the Congress of Mental Medicine recently held at Blois (*Sem. Med.*, August 10, 1892), Bourneville showed a number of idiots' skulls which presented no trace of synostosis or of premature ossification. He showed at the same time several skulls of children on whom craniectomy had been performed, and in these as in the others, the sutures were preserved. According to Bourneville, this proves that Lannelongue's theory of microcephalus, in which the operation of craniectomy finds its warrant, rests on no sound basis, either anatomical or physiological, and the procedure should therefore be definitely abandoned. In reply to G. Ballet, Bourneville said he had not yet met with a single case of complete synostosis in an idiotic or backward child. Regis of Bordeaux stated that about a dozen craniectomies had been performed in that city, and, so far as he knew, without any great benefit to the little patients. In one case death had occurred. Bouchereau said he was absolutely convinced of the uselessness of the operation, and he pinned his faith on the hygienic and educational treatment instituted by Bourneville at Bicètre. (See *British Medical Journal*, 1891, i., p. 1247.) Rouby stated that he had trephined without success an idiot child which had a congenital depression of the cranial bones.

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SANITARY.

THE KEELEY FRAUD IN LONDON.—At the last quarterly meeting of the Society for the Study of Inebriety, in London, the special subject of consideration was the "Keeley Cure." Dr. Norman Kerr, a physician of high repute, and a distinguished authority on the treatment of inebriates, presided.

The London *Lancet* of July 9, 1892, report the proceedings of the meeting as follows:

"The president said that hitherto temperance reformers in this country had usually worked by straightforward and intelligent methods, and had exercised that most valuable quality in reformers and everybody else,patience; and, as the magnificent results of the great temperance movement showed, a very large number of drunkards had been rescued, reformed or cured. But human nature was very impatient, and in these latter days there had arisen a feeling among a great many people that the evil of intemperance was growing so rapidly and extending so widely, and that the consequences in the present day and to posterity were so tremendous, that they must find some short cut to temperance, some miraculous method of speedily reaching the goal which neither they nor anybody else understood. Mesmerism and hypnotism were straightforward and open remedies for drunkenness, and if applied in the presence of medical men and witnesses they could not be called secret remedies. He wished, however, specially to refer—as circumstances had arisen to render this very necessary—to a so-called secret 'cure,' which was named the 'double chloride of gold cure,' to which allusion had already been made in the *Lancet* and other medical journals, and to advocate the merits of which a meeting was convened to be held under the auspices of the Church of England Temperance Society, presided over by Bishop Barry; but, owing to his (Dr. Kerr's) representations to the Bishop of London and Bishop Barry, that meeting had been adjourned *sine die*. The real but unavowed object of that meeting was to float a syndicate to raise £150,000 in this country in order to purchase the rights of using this so-called 'cure,' in England; £110,000 of this—according to the circular we have seen—was to be given in cash and £40,000 in shares to the vendors. There was to be a commercial company for pushing the golden remedy similar to other companies with which they were familiar. They were told in a pamphlet that 'without any effort on the patient's part' a cure would be effected by the use of this wonderful and infallible remedy as 'certainly as night followed day.' Already the decoction had apparently proved, if not a golden remedy, at least a veritable gold mine, for the bottles which contained it (one of which the chairman produced) were sold in pairs, and each cost $9 or 36*s.* There were twenty-six branches in America for the sale of this 'cure.' If the remedy were really a remedy for the victims of intemperance, surely it would have the support of the leading temperance reformers in America; but this, Dr. Kerr showed, was not the case. One writer in the *North American Review*, who had lauded this so-called cure, which he had tried, died in New York, a few months after the appearance of his article, the death of a pauper drunkard. The fact was that this falsely called "remedy" was very dangerous, and was compounded of a number of poisonous intoxicants. They would hear from Dr. Usher, of Melbourne, who had been to Dwight, Ill.—the center of the manufacture of the "cure"—what he thought of it and its effects. Dr. Usher, the chairman incidentally mentioned, was about to publish a new book on "Alcohol and its Treatment." A distinguished analyst, a member of a great medical corporation in England —whose name the chairman was not at liberty to mention—had made a careful analysis of the so-called "bichloride gold cure." The dictum of this gentlemen on a subject of this kind would, were he (Dr. Kerr) at liberty to name him, be received by all competent authorities without any hesitation whatever. Well, he (the analyst) found neither gold nor chlorides, but what he did find present was: Water 61.31 per cent; sugar, 6 per cent; a small quantity of mineral salts principally lime, probably from herbs, and 27.55 per cent. of pure alcohol as intoxicating as port or sherry and more intoxicating than champagne and claret. And yet old teetotalers, unconscious of the composition of the "gold cure," had been actually recommending a so-called 'remedy' more intoxicating than champagne or claret. Not only was this compound preparation condemned by the whole medical press of America and Britain, but by the whole reputable and respectable medical profession of the United States. Having spent many years in America, he could bear this testimony to the fact that although there was not there, as here, a system of registration, yet there were as honorable members of the medical profession in America as in Britain. The testimony of Dr. C. H. Merr, in an American journal, as to the 'results' of Dr. Keeley's treatment, showed that Colonel Mines, a few weeks after his 'cure,' died of alcoholism; Senator Fair's son died of heart disease directly attributed to the treatment; Walter R. Earle died a raving maniac a week after his dismissal; Henry Anstey died during treatment; Dr. Miller, of Illinois, Luther Benson and Charles Vaughan became insane; ex-Congressman Hopkins also went mad and died soon after treatment. This so-called 'remedy' was opposed to the whole true principle of enduring temperance reformation. The first thing to do with the drunkard was to cut off the poison—to stop the supply at once. Teetotalism was essential to the effectual cure of the drunkard. What, after all, was inebriety? It was a complex disease, and needed moral, mental, and physical treatment. An inebriate, to be cured, must himself have a desire to be cured, and must exercise a certain amount of will power when the narcotic action of the drugs had been swept away from the brain by the exclusion and prohibition of alcohol, then the little will power left would reassert itself.

"Dr. J. E. Usher, of Melbourne, Australia, then described a visit he had made to Dr. Keeley's sanatarium at Dwight. He was, he said, the first British physician who had visited Dr. Keeley's place. Three leading physicians from Boston, New York, and Philadelphia respectively—representing different societies—had preceded him; remained half a day or a few hours and then returned home. Six weeks later all their friends received circulars intimating that these gentlemen had seen remarkable successes in the cure way. Although he had visited the place with credentials from the Government, the Cabinet, and lay press of Australia, he had been traduced since he left Dwight. Dr. Keeley (who seemed very uneasy while he conversed with him) told him he had used the 'remedy' twelve years and it was very successful. He asked him what was the *rationale* of his treatment; what prescriptions he used. Dr. Keeley replied: 'We will not go into that. I know it is all right. If you want to know anything about it the secretary or chemist will tell you.' The 'chemist' turned out to be a sort of page-boy to Dr. Keeley. He (Dr. Usher) was introduced to Dr. Blaine, the 'chief of the staff.' The staff consisted of unsuccessful practitioners, who were paid from $3,000 to $7,000 a year; and they did all the work. Dr. Blaine took him where three rows of men were being injected in the left arm with five drops out of a little porcelain bowl containing a pinkish material—atropin really. Four of the patients wore glasses; and they told him they could not see three or four days after the treatment, and became blind weeks together. Seventy per cent. of the patients had glasses. They suffered, too, from giddiness. One patient had been at the institution nine weeks, he said, and was afraid to leave, because three of his 'pals' who had left ten days before got drunk and had to come back. Another patient remained because he said if he stayed there two or three months an aunt had promised him an annuity, and he 'wanted to see the time out.' There was a 'Bichloride of Gold Club' in which there were 'graduates' and 'undergraduates,' so-called. They did not appear to be healthy; some of them seemed to be under the influence of an opium drug—atropin. About £40,000 a year was spent in advertising or in subsidizing people to advertise the concern, which was now engineered by some of the 'smartest' men in America. The thing was most lucrative. Two bottles of the preparation cost 36s. Every man who went to Dwight had to pay $25 down and from $5 to $25 a week; and all this money flowed into the coffers of the company.

"Dr. Morton (Kilburn) moved: 'That this meeting of the Society for the Study of Inebriety (of which the members are registered British medical practitioners) is of opinion that any so-called "cures" for inebriety the composition of which is not disclosed are unfit to be commended by honorable members of the medical profession, who are bound to place the full details of their treatment before their professional colleagues—a requirement as essential in the interest of the public as it is consonant with the disinterested practice of scientific therapeutics.'

"Mr. J. Smith, late superintendent of the Dalrymple Home, seconded the motion, which was carried unanimously.

"Surgeon-Major Pringle moved, and Mr. Jabez Hogg seconded: 'That this meeting, having been informed by a competent London analyst, who has made a special analysis, that the alleged "bichloride of gold cure" shows no trace of gold or of chlorides, and contains 27.55 per cent of alcohol, condemns unreservedly the prescription of such an intoxicating preparation to an inebriate.'

"This, too, was carried unanimously."—*Sanitarian.*

A Crusade Against Spitting.—Neither the sense of social decency nor the recent teachings of bacteriology have yet availed to restrain the average American citizen from exercising his privilege as a free man of voiding his sputum wherever he pleases. The ladies are now, we are pleased to observe, taking the matter in hand, and what the American woman sets her mind on doing she generally manages to effect. Dr. T. M. Prudden recently asked: "Shall we not have a Society for the Prevention of Expectoration?" The object of the proposed society is beyond all praise, though perhaps a little "thorough" (in Strafford's phrase) as long as unperfected man continues to be subject to catarrhal infirmities. It was not long, however, before Dr. Prudden was informed that his proposal had been anticipated. Mrs. John M. Oakley, of Pittsburgh, Secretary of the Women's Health Protective Association of Allegheny

County, announces (in the *New York Medical Record*) that she and the body of which she is an ornament have been fighting the spitting nuisance by organized effort for more than a year. "By ceaseless importunity," she says, "we have induced the managers of the different street car companies to post placards prohibiting spitting in all their cars, and a noticeable improvement in the condition of these vehicles has already been effected." The Pittsburgh, Cincinnati and St. Louis Railroad and the Allegheny Valley Railroad have placed similar notices in their stations, and it is hoped that the other railways will in time follow their example. A notice specially prepared by the State Board of Health pointing out the sanitary dangers of indiscriminate expectoration will soon be posted in every public school room in Pittsburgh, and the teachers are to be instructed to preach to their pupils every week from the text supplied by this notice. Mrs. Oakley adds, with a fine hygienic enthusiasm which we should like to see more general in members of the fair sex: "Forty thousand children will thus be taught not to spit in public." Among the millions over whom the American eagle spreads its protecting wings, forty thousand are as a drop in the ocean; but if even a small number can be got to dispose of the secretion of their bronchial tubes in a manner conformable to the requirements of civilized life, it may serve in time to leaven the mass.

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ABSTRACTS.

SURGERY.

Recovery after Extensive Injury of the Brain.—E. Areilza (*Rev. de Cien. Med. de Barcelona*, August 10th) reports the following case. A lad, aged 18, sustained a comminuted fracture of the skull with injury to the brain from a dynamite explosion of May 8th. He lost consciousness, but only for a quarter of an hour. It was observed by those who first came to his assistance that his head was inclined to the right side, and that efforts to turn it to the left were difficult and painful, though there was no appearance of injury in the neck. This, and a tendency to drowsiness, were the only symptoms presented by the patient. He came under Areilza's care four days after the receipt of the injury; the temperature was then raised (39° C.), and the edges of the wound were inflamed. The membranes were destroyed over the area of the wound, and hernia cerebri was present, the protrusion being increased by every effort on the part of the patient. The disorganized tissue was removed, and the fragments of bone with which the wound was filled were carefully extracted, about a dozen pieces being found imbedded in the brain substance, some at a depth, of more than 4 centimetres from the surface. The wound in the skull formed an irregular rectangle 4½ centimetres in length by 3 in breath, involving the right part of the frontal bone, 2 centimetres in front of the parietal suture, and bounded on the inner side by the middle antero-posterior line of the skull. The loss of brain matter was considerable, and comprised the junction of the middle and posterior thirds of the first and anterior frontal convolutions, especially the former. The excavation was sufficient to allow of the passage of a drainage tube to a depth of 5 centimetres from the cranial surface. The wound was thoroughly cleansed, closed with stitches, and covered with an antiseptic dressing. In two days the temperature fell to normal. The drainage tube was taken out in ten days, and by the end of June the patient was completely cured. The wound was firmly healed, the brain adherent, and pulsation not very marked.

Operative Treatment of Congenital Dislocation of the Hip.—Lorenz (*Centralbl. für Chir.*, August 6, 1892) reports six cases of congenital dislocation of the hip which he has treated by a modification of Hoffa's operation. He holds, in opposition to the view on which Hoffa based the steps of his operation, that the chief difficulty in bringing down the head of the femur is not caused by contracture of the pelvi-trochanteric muscles. On the contrary, these muscles will be found relaxed, while those taking the same direction as the long axis of the shaft of the femur are strongly contracted, and form tense and rigid cords. The muscles most contracted are the semimembranosus, semitendinosus, biceps] and rectus, while the abductors share in the contraction in a lesser degree, as they deviate more and more from the vertical direction. The following are the steps of the operation practiced by Lorenz: During forcible extension of the lower limb and counter-extension, the abductors are divided subcutaneously, and through the same puncture in the skin the stretched and prominent hamstring muscles are detached from the tuberosity of the ischium. Extension being still maintained, a skin incision about 3 inches in length, is carried directly downward from the antero-superior spine of the ilium. The margins of this wound being separated, the deep fascia, and the anterior borders of the tensor vaginæ and of the gluteus medius are divided in a transverse direction. After exposure of the rectus and division of its tendon close to the antero-inferior spine, the anterior portion of the capsular ligament is divided by a crucial incision. Extension of the limb is now discontinued, and the region of the acetabulum is rendered accessible by flexing, abducting, and thrusting upward the femur. It is necessary at this stage to detach some of the tense portions of the capsule from the anterior and inner surfaces of the neck of the bone. This should be done very carefully with a blunt-pointed knife guided by the finger. The acetabulum, or the region corresponding to this cavity, can now be readily attacked by a gouge or sharp spoon passed along the forefinger of the left hand, and may also, on forcible separation of the sides of the wound, be exposed to view. The cotyloid cavity is now deepened, care being taken to spare the osseous elevation which forms its posterior and upper boundaries. Finally, the head of the femur is drawn down and placed in the deepened cavity. The edges of the wound, except in the middle, which is left open for drainage, are brought together by catgut sutures, and a plaster-of-paris bandage is applied with the femur slightly abducted. Old and irreducible traumatic luxation at the hip might, the author states, be treated by a similar operation, but, in order to expose freely the head of the femur and the capsule, it would probably be necessary to make a second incision behind the trochanter.

Results of Excision of Cancer of the Rectum.—Schmidt (*Beiträge zur klinischen Chirurgie*, Bd. 9, Heft 2) analyzes 68 cases in which, since 1885, Czerny has practiced excision of portions of the rectum for cancer. In 32 of these cases the perineal method was performed, and in the remaining 36 cases the sacral method. In one case only was the perineal operation attended with a fatal result, while after the sacral method 7 patients died from the immediate effects of surgical intervention. These tables show that in Czerny's practice the average duration of life after the perineal method is about two years. Of 14 patients who were living at the time when these tables were being prepared, 3 were quite free from relapse after intervals of over five years. Of the 15 patients who survived the sacral operation, 6 were free from relapse after intervals from the date of operation of more than two years.

Extirpation of Cancer of the Stomach.—Defontaine (*Arch. Prov. de. Chir.*, July, 1892) reports the following case. The patient was a woman aged 34, who commenced to suffer from stomach troubles in October, 1891. She first had attacks of flatulent dyspepsia and pain in the stomach at various times. In January, 1892, attacks of vomiting came on. They were not frequent, but were violent, and much material was ejected. These at first consisted of food, but lately the vomit has been of a chocolate color. This patient was seen on April 15, 1892, when a tumor was discovered in the left side of the abdomen and just above the umbilicus; it was rounded in shape, about the size of a kidney, and was perfectly movable; it could easily be moved from one side of the middle line to the other. A malignant tumor, probably in the wall of the stomach, and without important adhesions to neighboring structures, having been diagonsed, on May 1st the patient was chloroformed, and an incision was made in the linea alba. On examining the abdominal cavity, a tumor was felt on the left of the incision. It was globular in shape, smooth, about the size of an apple, its surface covered with injected blood-vessels, and it was apparently situated in the wall of the stomach, since attached to its lower border their was the great omentum. Above it was fixed to the anterior surface of gastro-hepatic omentum. This adhesion was easily separated, but as this part of the omentum felt a little indurated, it was divided into two parts, ligatured and removed. The tumor was then excised with scissors. The stomach was opened, and the finger being used as a guide, the separation was effected about one centimetre from the margin of the tumor. The mucous membrane bled considerably, but this was stopped with pressure forceps. The tumors was then removed, and then after the stoppage of hæmorrhage and washing out the stomach, the margins of the wound in the stomach walls were brought together and united with a double row of sutures. The deeper row was passed through .the mucous membrane and submucous tissue, and sometimes through the muscular coat. The superficial row was applied after Lembert's method through the serous and subserous coats. After this was done, the skin incision was closed, and dressings of iodoform gauze applied. The operation occupied two hours and a half. The patient recovered, and on May 26th was well, and had increased in weight.

Separation of Symphysis Pubis in a Forceps Delivery.—Marschner (*Centralbl. f. Gynäk.*, No. 31, 1892), in the course of a discussion on symphyseotomy, at the Dresden Gynæcological Society, stated that about two years ago he was managing an " easy forceps case," when the woman under chloroform, sprang up and threw herself on one side. He then found that the symphysis pubis had parted. The appearance of the parts was alarming; the position of the urethra could not be made out on the first day. He applied three very stout silver sutures, passing them through the bone on each side. But when the patient's legs were unfastened, one suture snapped and the others came undone. A second suturing wiih silk and with four-fold twined silver wire proved successful. The patient was in good health, and when the case was reported (June, 1892) was expecting to be confined again. She could walk very well, but in bad weather, or after walking over heavy ground, neuralgic pains were felt in the pelvis and left leg. The sutures were left in place for about three months.

ABRASION OF THE ENDOMETRIUM IN CHILDBED.—Petroff (*Vratch*, 1892, p. 528) strongly urges free abrasion of the uterine mucosa and subsequent antiseptic dressing when intrauterine injections fail to disinfect the parts after childbirth. A woman, aged 33, was prematurely confined after a fall down stairs. Next day she returned to her work at the sewing-machine. On the fourth day the placenta came away; on the sixth the temperature rose to 105° F., the pulse to 132. A fœtid discharge was discovered. The patient was put under choloroform, the decomposing remains of the placenta removed, the uterus dressed antiseptically, and a tampon placed in the vagina. The patient recovered, the temperature falling. Dr. Neugebauer, in a note on this case (*Nouv. Arch. d'Obstét. et de Gynéc.*, July, 1892), observes that Petroff does not appear to have heard of the serious objections against this practice raised by Fritsch and others.

CANCER OF CERVIX PRESSING ON URETERS.—Jourdan (*Journ. de Méd. de Bordeaux*, May 15th, 1892) observed this case in Dr. Gervais' wards. The patient was 34 years old. She was admitted on April 24th, with dyspnœa and suppression of urine. The kidneys were cystic, uterine cancer was present, the heart's action was very irregular. On the second day she died. Much serous effusion into the pleuræ, pericardium, and peritoneum was discovered. A cancerous growth, arising from the cervix, compressed the bladder to the level of the trigone. The ureters were greatly dilated on both sides, being as big as small intestine. The kidneys showed all the characters observed in obstruction from pressure on the ureters in cases of malignant growths.

PARIS.—LAICIZATION OF HOSPITALS—NIGHT REFUGES—NEW MEDICAL LAW—MEDICAL STUDENTS AND THE "INTERNAT"—VIBRATION IN PARALYSIS AGITANS.—Dr. Héret, Pharmacien en Chef des Hôpitaux, publishes in the *Tribune Médicale* two interesting articles on the laïcization of hospitals. He maintains that the lay nurses are more docile and better educated than sisters of charity, devote more time to their patients, and are entirely guided by the Chef du Service. The New Municipal Council of Marseilles has under discussion the question of licensing the hospitals of that city. In Paris there are only three hospitals where sisters of charity fill the posts of nurses. The Conseil d'État is discussing the question of lay nurses for the first time; and M. Albert Petrol will question the Prefect of the Seine and the Director of the Public Assistance on the subject. Le Conseil de Surveillance of Public Assistance have just resolved by 8 votes against 6 that lay nurses replace the sisters of charity at the Berck Marine Hospital.

L'Œuvre de l'Hospitalité de Nuit (night refuges) has published its balance sheet; the expenses amount to £4,000. This charity was organized in 1878; in 1891 it sheltered 98,728 men, 2,825 women, 792 children; 1,357 of these paupers were provided with different occupations. Since this charity has been organized it has succored 750,860 paupers.

The Chamber of Deputies has voted the new medical law, a summary of which has already been given in the *British Medical Journal.* If the Senate accepts the bill, it will come into force next year; if not, it is difficult to say when.

The Public Assistance has adopted the suggestion made by the medical students as to the age limit of candidates for the *internat* (house surgeonship), which was formerly fixed at 25. This is now changed, and medical students are not in future to be admitted after the sixth year following their first registration fee. Thus a student commencing his studies November, 1890, can take part in the *Concours pour l'Internat* in 1896. He will then have been able to serve his first year of military service, and if necessary, have tried four times to pass that terrible ordeal of the *concours.*

M. Charcot recently gave at the Salpètrière a remarkable lecture on a new method of treating certain nervous affections by mechanical vibrations. M. Charcot has observed that patients afflicted with paralysis agitans were greatly relieved by taking long journeys on the railway, or driving. He had constructed by MM. Jégu and Solignac a mechanical armchair which observes the same movement as in a railway carriage when the train is running. This *trépidant* armchair is used by MM. Charcot and Gilles de la Tourette for treating patients suffering from paralysis agitans. After passing a short time in the armchair the patients sleep peacefully, the trembling disappears, also stiffness in their movements. M. Gilles de la Tourette has invented a vibrating helmet which transmits vibrations and localizes them. It is very useful in cases of insomnia.

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CORRESPONDENCE.[1]

Dear Doctor:—If I had known that you desired me to give your readers an account of my impressions of medical Berlin, I might have done so more acceptably while "on the spot" than after my return home. Now, as I sit down to the task I hesitate, thinking that most of your readers are already familiar with what Berlin has to present to a medical man. But while I must confine myself to a few rambling statements, they may prove of interest to some one.

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[1] This letter to Dr. Wyman, of Detroit, is so interesting that we publish it entire.

Foreign medical men are matriculated at the University of Berlin, or in fact at any of the German universities, on the declaration that they are students of medicine, and the presentation of a passport from their government. They are accorded all the privileges of the German student and are expected to fulfill the same requirements. To those who write for a German degree, due allowance is made for time spent in study at accredited medical colleges at home. The matriculation is somewhat tedious and ceremonial, but it only requires, in addition to passport, etc., a slight knowledge of the language and enough patience to run the gauntlet of the matriculation committee of the faculty.

Berlin is without a doubt the medical center of the world at the present time, owing, of course, to the labors of Virchow, Koch and the many other members of the faculty who have been and are in the front rank as original investigators. The German government has been very liberal in its appropriations of money for the building of medical institutions and the result is the fine clinics and hospitals to be found in all quarters of the city of Berlin. The hospitals "Friederichshain," "Urban" and "Moabit" are models, built on the cottage plan and with every modern convenience and appliance which skill could suggest or money furnish.

Instruction is given in the clinic or laboratory wherever possible, there being very little didactic teaching, and I think to these facts are due the strength and thoroughness of the German system of medical education. The student is not only called upon to diagnose and prescribe before the class, but he is required to carry out the various methods of treatment and use the various instruments of precision and of the specialties, not once or twice a semester, but according to the frequency with which he visits the clinics. The largest and most interesting surgical clinic of Berlin is that directed by Prof. von Bergmann, the "Royal Surgical Clinic," daily from 2 to 4 p.m., and here a great variety of surgery may be seen. Von Bergmann has been doing a great deal of work in the field of brain surgery of late years, and I think he is regarded by the Germans as their most able surgeon, in this special field at least. His observations on tumor and abscess of the brain, and the surgical treatment of epilepsy, which have been published in book form, are especially valuable. Von Bergmann is not an "antiseptic surgeon" in the ordinary sense, but adheres strictly to thorough asepsis and is particular to have everything about and in connection with his operation sterilized by steam heat. He holds that the process of healing is delayed or prevented by external influences only, and that the surgeon is responsible for every interruption in the healing of a wound.

There seems to be in Germany more than anywhere else two separate schools on the question of the proper treatment of wounds with regard to the arrest of hemorrhage. The one of which von Bergmann is probably the most able and active exponent, which teaches that all hemorrhage and capillary oozing should be checked before the wound is dressed, in order to follow out the spirit of aseptic surgery and obtain the best results; and the school which follows the teachings of Schede, that the blood clot becomes organized tissue and aids in the process of healing, and therefore by allowing capillary and superficial hemorrhage to go unchecked, better results are obtained. As far as the observation of a student goes the results of either method as shown by von Bergmann or Schede seem equally good, all that one could hope or wish for, and one seems warranted in sympathizing with either school.

I was impressed by several interesting and instructive rhinoplastic operations which I witnessed. They were done after a method which I think was first practiced by König, of Göttingen, for the improvement of sunken noses after a primary operation. A flap of sufficient size is taken from the meridean line of the forehead, the incisions made to include the external table of the frontal bone under the flap down to the root of the nose. The flap is then turned and brought down over the defect with the skin looking inward. Another flap is then made from the forehead and brought down over the raw surface and attached. This secures a permanent result, and there seems to be no danger of subsequent sinking. The method has certainly yielded good results. Dermatol, which has recently been brought to the attention of the profession, is being largely used in the clinics, taking the place of iodoform as a dressing. It is said not to be as irritating, without poisonous effect, odorless, and fully as useful as iodoform. There are a number of splendid medical clinics in Berlin: Gerhardt's, Senator's, Leyden's—of which Prof. Gerhardt's at the Charite, mornings from 8 to 10, is probably the most interesting. I need not say that Gerhardt is an excellent clinician and able teacher. There was recently presented at the Charite a case which shows that even the best are liable to mistakes in diagnosis. It seemed to be one of those cases of typhoid fever which simulate miliary tuberculosis. The differential diagnosis was dwelt upon and particular reference made to the frequency of the deposit of tubercles on the choroid in the latter disease. The ophthalmoscope gave negative results, and the symptoms being favorable a diagnosis of typhoid fever was made. The case soon terminated in death, and the autopsy revealed general miliary tuberculosis. Of course this is not the first instance where similar mistakes have been made by the best diagnosticians, but it is sometimes impossible in these cases to make an accurate diagnosis paragraph. I presume that nearly every medical man who goes to Germany is particularly interested in pathology. Berlin is not as good a place for this study, generally speaking, as might be. True, the great Virchow is there, and lectures almost daily, but pathology must be learned in the laboratory, and one is expected to be a pretty independent worker before he begins at the Pathological Institute in Berlin. An amateur, so to speak, can do better elsewhere. There has been no systematic treatise containing the newer facts in pathology issued by Virchow himself. But the little work entitled "Pathological Anatomy," by Dr. R. Langerbrans, assistant to Virchow, clearly represents the latest labors of the great pathologist, and the present status of pathology. I believe it is now being translated into English.

It is rather late to speak of tuberculin, but I might mention that only a short time ago Prof. Gerhardt declared that he had not lost his faith in it, and I think it is still being used at the Moabit hospital. In addition to the regular semester courses in Berlin, there are "vacation courses" of five weeks' duration twice a year. They are more particularly for physicians, and correspond to our post-graduate courses, being very practical. There are many other things of interest that might be mentioned, but I fear that I have already unwarrantably encroached upon your space.

GILBERT SEAMAN, M.D.

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BOOK REVIEWS.

"Regional Anatomy in its relation to Medicine and Surgery." By Geo. McClellan, M.D. Illustrated from photographs, taken by the author, of his own dissections, expressly designed and prepared for this work and colored by him after nature. In two volumes. Vol. II. Philadelphia: J. B. Lippincott & Co., 1892.

We entered into so much detail in our review of the first volume of this work that it would fall little short of the full measure of justice, not to say accord a high degree of praise, did we only state that the second volume is a worthy successor of the first. Indeed, apart from stating the manner in which the author has finished in this volume the subject of regional anatomy, there is little left to say; for, considered from a scientific as well as an artistic standpoint, the present volume is certainly no worse, and could be no better than its predecessor; and the work, as a whole, representing as it does the unusual range of talent exhibited by its author, has seldom, so far as we know, been equalled.

It is not uncommon to hear the trite remark that there is no room for originality in a work on anatomy; and while we admit this proposition as to certain features, more especially the accurate knowledge of this most important and practical branch of medicine, a matter of every-day experience even with laymen, there is an important departure in this very work in the method of arranging the subject matter, as well as in the character of the illustrations. The title gives the key-note to the situation, "Regional Anatomy *in its relation to Medicine and Surgery*." (The italics are our own.)

The volume opens with the Region of the Abdomen, and if we were to simply recapitulate the subjects entailed in the consideration of this one department, it would involve us in a small index of anatomy. The Inguinal Region, the Region of the Pelvis, of the Perineum, of the Back, the Lumbar Region, the Genital Region, the Region of the Hip, of the Thigh, of the Knee and Popliteal Space, of the Leg, and of the Ankle and Foot complete the volume.

To give a simple illustration of the ramifications in the consideration of a single region, take that of the Knee and Popliteal Space. Twenty-three pages of text, two plates and nine figures are concerned in giving an account of the bones of the knee, the patella, the bursæ-patellæ, housemaid's knee, the upper end of the tibia, the knee joints, the ligaments of the knee, synovial membrane of the knee, synovitis of the knee, motions of the knee, landmarks of the knee, the skin and superficial fascia of the knee, patellar arterial rete, the superficial nerves of the knee, the ham, or popliteal space, the popliteal fascia, the peroneal nerve, the popliteal artery, nerve, vein, the operation for tying the popliteal artery, the lymphatic glands in the popliteal space, the popliteal bursæ, the popliteus muscle, ankylosis of the knee, disease of the knee joint, fracture of the patella, fracture of the upper end of the tibia, dislocation of the patella, of the knee, excision of the knee and amputation at the knee joint.

When, in conclusion, we can honestly put it to the best of all tests—the personal one, and having already done so, add that such an examination and use of these two volumes has each time emphasized their value to a practical working surgeon, no further comment can be necessary or expected.

"The Principles and Practice of Medicine." Designed for the use of Practitioners and Students of Medicine. By William Osler, M.D., Fellow of the Royal College of Physicians, London; Professor of Medicine in the Johns Hopkins University and Physician-in-Chief to the Johns Hopkins Hospital, Baltimore; formerly Professor of the Institutes of Medicine, McGill University, Montreal; and Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia. Sold only by subscription. Prices, cloth, $5.50; sheep, $6.50; half morocco, $7.

The classifications which the author adopts can best be understood by means of the following sketch, or analysis, to which is added the number of pages devoted to each chief division:

The First Section of the work has for its title Specific Infection, Diseases, and includes typhoid fever, typhus fever, relapsing fever, small-pox, vaccinia, varicella, scarlet fever, measles, rubella, epidemic. parotitis, whooping-cough, influenza, dengue, cerebro-spinal meningitis-diphtheria, erysipelas, septicæmia and pyæmia, Asiatic cholera, yellow fever, dysentery, malarial fever, anthrax, rabies, tetanus, syphilis, tuberculosis, leprosy, glanders, actinomycosis.

While under the head of Infectious Diseases of Doubtful Nature are classed ephemeral fever, Weil's disease, milk-sickness, Malta fever, mountain fever, and miliary fever. (269 *pages.*)

Constitutional Diseases is the title of the Second Section, and they embrace rheumatic fever, chronic rheumatism, pseudo-rheumatic affections, muscular rheumatism, arthritis deformans, gout, diabetes mellitus, diabetes insipidus, rickets, scurvy, purpura, and hæmophilia. (53 pages.)

The Third Section of the work, entitled Diseases of the Digestive System, embraces stomatitis, diseases of the salivary glands, diseases of the pharynx, diseases of the tonsils (acute and chronic), diseases of the æsophagus (including acute æsophagitis, spasm of the æsophagus, stricture, cancer, rupture, and dilatations), diseases of the stomach (with methods of clinical examination), acute gastritis, chronic gastritis, neuroses of the stomach, dilatation of the stomach, peptic ulcer (gastric and duodenal), cancer of the stomach, and hæmorrhage from the stomach.

Then follow Diseases of the Intestines, including catarrhal enteritis, diarrhœa, enteritis in children, diphtheritic or croupous enteritis, phlegmonous enteritis, mucous colitis, ulcerative enteritis, miscellaneous affections of the bowels, appendicitis, intestinal obstruction and constipation.

Under the heading Diseases of the Liver are jaundice (in its various forms), affections of the blood-vessels of the liver, diseases of the bile-passages, cirrhosis, abscess of the liver, new growths in the liver, fatty liver and amyloid liver.

Diseases of the Pancreas include hæmorrhage, chronic pancreatitis, pancreatic cysts and cancer.

Diseases of the Peritonæum take in acute general peritonitis, peritonitis in infants, localized peritonitis, chronic peritonitis, new growths in the peritonæum and ascites. (150 pages.)

The Fourth Section of the work, under the heading Diseases of the Respiratory System, includes acute coryza, chronic nasal catarrh, autumnal catarrh and epistaxis.

Diseases of the Larynx embrace acute catarrhal laryngitis, chronic laryngitis, œdematous laryngitis, membranous laryngitis, spasmodic laryngitis, tuberculous laryngitis and syphilitic laryngitis.

Diseases of the Bronchi include acute bronchitis, chronic bronchitis, bronchiectasis, bronchial asthma and fibrinous bronchitis.

The subdivisions under Diseases of the Lungs are circulatory disturbances of the lungs, pneumonia, chronic interstitial pneumonia, broncho-pneumonia, emphysema, gangrene of the lung, abscess of the lung, pneumonokoniosis and new growths in the lungs.

Diseases of the Pleura are treated under the sub-headings of acute pleurisy (in its various forms), chronic pleurisy, hydrothorax and pneumothorax.

This is followed by a short section on Diseases of the Mediastinum. (106 pages.)

The Fifth Section of the work is devoted to Diseases of the Circulatory System, beginning with those of the pericardium, which include Pericarditis and other affections on the pericardium.

Under Diseases of the Heart are endocarditis, chronic valvular disease, hypertrophy and dilatation, affections of the myocardium, neuroses of the heart, and congenital affections of the heart.

Diseases of the Arteries embrace degenerations, arterio-sclerosis, and aneurism. (102 pages.)

The Sixth Section is on the Diseases of the Blood and Ductless Glands, and includes anæmia, luekæmia, Hodgkin's disease, Addison's disease, and diseases of the thyreoid gland. (32 pages.)

The Seventh Section of the work takes up Diseases of the Kidneys, and includes anomalies in form and position, circulatory disturbances, uræmia, Bright's disease (acute and chronic), amyloid disease, pyelitis, hydronephrosis, nephrolithiasis, tumors of the kidney, cystic disease of the kidney, and perinephric abscess. (67 pages.)

The Eighth Section is on Diseases of the Nervous System, the first subdivision being on Diseases in the Nerves, including neuritis, neuromata, diseases of the cranial nerves and diseases of the spinal nerves.

The second division is on Diseases of the Spinal Cord, embracing affections of the meninges, affections of the blood-vessels, and acute and chronic affections of the spinal cord.

The third division takes up Diseases of the Brain, including Affections of the meninges, affections of the blood-vessels, affections of the substance, hemiplegia and diplegia in children, sclerosis of the brain, chronic diffuse meningo-encephalitis, tumors of the brain and chronic hydrocephalus.

The fourth division is on General and Functional Diseases, and deals with acute delirium, paralysis agitans, acute chorea, other affections described as chorea, infantile convulsions, epilepsy, migraine, neuralgia, professional spasms, occupation neuroses, tetany, hysteria, neurasthenia, the traumatic neuroses, and other forms of functional paralysis.

The fifth division includes Raynaud's disease, angio-neurotic œdema, facial hemi-atrophy, and scleroderma. (219 *pages.*)

The Ninth Section is on Diseases of the Muscles, including myositis, idiopathic muscular atrophy, Thomsen's disease, and paramyoclonus multiplex. (6 *pages.*)

The Tenth Section treats of intoxicants, sun-stroke, obesity, and embraces alcoholism, morphine habit, lead poisoning, arsenical poisoning, ptomaine poisoning, grain poisoning, sun-stroke, and obesity. (21 *pages.*)

The Eleventh Section takes up the Diseases due to Animal Parasites, and embraces Psorospermiasis, distomiasis, diseases caused by nematodes, diseases caused by cestodes, parasitica arachnida, parasitic insects, and pseudo-parasites. (33 *pages.*)

We have given at considerable length the contents of this late work on the Practice of Medicine, and we do not feel that we owe our subscribers an apology for so doing. We have too often had occasion to note the multiplicity of good books in medicinal lines in medicine and surgery, and to comment on the continual making of more—some good and others indifferent and still others positively bad. When, therefore, a man as well known for a number of years for both his practical attainments and for his numerous classical monographs as Dr. Osler is prevailed on to add another textbook in such familiar lines, there must be an occasion for his undertaking such a task.

In giving our readers an opportunity to see for themselves his method of handling this immense subject, as well as the space which he takes to do it, we do not feel that we are doing either them or the author an injustice.

As a terse, comprehensive, useful working companion we know of no superior work in its line. Conservative always, full of the author's personal experience and knowledge gleaned therefrom, it bears on its face the impress of honest convictions and may be safely consulted as an invaluable aid.

1. "Psycho-Therapeutics; or, Treatment by Hypnotism and Suggestion." By C. Lloyd Tuckey, M.D. (Third Edition, Revised and Enlarged. London: Baillière, Tyndall & Cox. 1891.)

2. "The Practice of Hypnotic Suggestion ; being an Elementary Handbook for the Use of the Medical Profession." By Geo. C. Kingsbury, M.A., M.D. Univ. Dub. (Bristol : John Wright & Co. 1891.)

It is too often the fate of a new discovery, and of a forgotten discovery brought again to light, that it should be on the one hand misrepresented, and on the other misunderstood. Its exponents are apt to magnify their office by claiming for the new thing more than it justly deserves ; its detractors, repelled by the language of exaggeration, jump to hasty conclusions and condemn it almost unheard.

It may be affirmed with safety that the class of phenomena comprised under the names of hypnotism, treatment by suggestion, and mesmerism have largely suffered in this way, and that they have only recently come to receive rational explanation, and to take their due position in physiology and therapeutics. This need occasion no surprise when we bear in mind how recent is anything like exact knowledge of the nervous system in other respects, and that the physiology of normal sleep and of dreams, with which hypnotism seems to be most closely related, is as yet imperfectly if at all understood.

It must be admitted that there are many thinkers, including some of most scientific and revered members of the medical profession, who will as yet have nothing to do with hypnotism, and who look upon its professors as charlatans, or as the dupes of their subjects. This position they will continue to hold until those who employ it can show some tangible results of their practice. Difference of opinion as to its mode of action would doubtless continue, as in the case of other remedies; but if its efficacy were once made apparent, practical physicians would be content to use it empirically, while waiting for more light.

The two books before us are endeavors, more or less successful, to explain wha tmodern hypnotism really is, what kind and degree of benefits are believed to result from its employment, and to some extent what is its probable mode of action.

It is at once apparent that hypnotism is after all no new thing, that its phenomena have been with the race for ages, and that they affect probably all sentient beings to a greater or less degree. The system is simply the reduction of these phenomena to a common law, and the employment of means, hitherto used only at haphazard, in a deliberate and systematic manner. Thus, suppose a practitioner is called to a patient who says he cannot sleep without a hypodermic injection of morphine, the practitioner possibly administers an injection of water, and a good night's rest is secured. Here it will be admitted at once that the desired result, sleep, was attained, and that not by the inert drug water, but by the impression made on the patient's mind. An analogous result is often recognized as occurring where no active treatment is employed, and the mere visits of the physician inspire confidence in the patient, and are followed by a steady return to health. These are phenomena within the experience of all; hypnotism is content to accept them as ultimate facts, and endeavors to widen their application and intensify their influence. These indications are followed by inducing in the patient's mind a condition of peculiar sensibility to suggestions—in short, what is known as the hypnotic sleep. How this is done may be best explained by a quotation from Dr. Kingsbury's book. Describing the method adopted by Dr Liébeault at Nancy, he says: "The patient sits as comfortably as possible in an easy-chair, with his back to the light, and the doctor stands beside him and holds up the index and middle fingers of his own hand about six or eight inches from and a little above the patient's eyes. The patient is told to look at these, and try not to think of anything. Almost immediately the operator begins in a low and monotonous tone to suggest sleep, after this fashion: 'You are beginning to feel sleepy;' 'Your sight is getting dim;' 'My fingers are getting indistinct;' 'Your eyelids are drooping;' 'Your eyes are closing—sleep!' etc. Presently, and in many cases in an astonishingly short time, the patient's eyes begin to blink and then close." Sleep is generally induced in a few minutes, sometimes at the first, frequently at the second or third sitting.

So far there is nothing to distinguish the hypnotic from ordinary sleep, except its mode of induction. But important differences exist. The patient, though asleep to the rest of the world, is really awake as regards the operator—the person who sent him to sleep. He hears every word he utters, obeys his orders, and awakes when he tells him. It seems as though he were in a dream, of which the operator held the thread. The reality of this condition of hypnosis is now well established—it has been induced by physicians of known reputation in all countries, and in patients who were above the suspicion of collusion. No complete explanation of the condition can be offered, nor will an explanation be forthcoming until the process of natural sleep is understood.

And now it may be said, granting the reality of this hypnotic sleep, how may it be expected to benefit a patient? In this way: We have seen that in many cases there is during waking moments a certain susceptibility to ideas suggested, verbally or otherwise, by the physician, which sometimes leads to beneficial results. *During the hypnotic sleep this susceptibility is increased, and is more or less present in every one in whom hypnosis has been induced.* Subjective symptoms, such as headaches, sickness, insomnia, are often found to disappear when the sufferer has been hypnotized, and while in that state told that the desired result would follow. It may be here objected that this is only removing a symptom, while the disorder on which it depends remains unaffected; but in reality these so-called "symptoms" often constitute the whole of the disease, and, in the words of a distinguished clinician, "in the case of functional disorder, to speak of the clinical phenomena as symptoms is really to reduce the disorder itself to an abstraction." However, it is claimed for hypnotism that it does not influence disorders that are merely subjective alone, but that many other diseased processes may be modified by suggestion, such as irregularity of the bowels, menstrual disorder, muscular spasm, disturbances of the circulation and the like.

Such is a brief outline of the practice of hypnotic suggestion as set forth in the two books under consideration. Dr. Tuckey's is not altogether new, but is now nearly double the size of the first edition. The additional matter consists chiefly of chapters dealing with the probable nature of hypnotism, and reports of a large number of cases treated by it. The chapters on the nature of hypnotism do not seem to throw much light on the subject, and strike us as being rather of the nature of padding. The theory of inhibition, discussed at great length, does not seem to cover all the facts; but the author is, no doubt, on safe ground when he says that we know at least as much about the action of hypnotism as we do about that of many drugs which we use every day. The further statement that "it probably depends upon intra-cellular changes in the arrangement of molecules, whereby the discharge of nerve energy is prevented," if it means anything at all, is only a translation of observed psychical facts into materialistic theoretical terms, and adds nothing to our knowledge.

Dr Kingsbury's book is, like Dr Tuckey's, very pleasant reading, though somewhat oracular in tone. A chapter devoted to a description and exposure of Professor Luys' transfer experiments we have hardly had patience to read. Professor Luys believes that various diseases can be transferred from a sick person awake to a hypnotized subject by means of a magnet, and that when the hypnosis is ended the subject is at once freed from all traces of the transferred ailment. It is not worth while to do more than allude to the foolish practices described as carried out in Professor Luys' laboratory; they remind us of something we have read in the "Arabian Nights." Dr Kingsbury seems to us to take Professor Luys too much *au grand sérieux;* he completely demolishes his theory of the influence of magnets, but it is an edifice of cards that a touch would suffice to overthrow.

The crucial test of hypnotic as of other forms of treatment must be experienced, and we turn with pleasure to the concluding pages of both Dr. Tuckey's and Dr. Kingsbury's books, where we find careful records of many cases in which treatment by suggestion has been followed by most happy, in some cases even brilliant, results. While exercising all due caution, we must receive these records with respect; and we commend them to the careful study of all who desire to form an opinion about the value of hypnotism.

In conclusion, we may safely assert that for any one who wishes to know the current views on hypnotism and treatment by suggestion, it will be well to read carefully and without bias either Dr. Kingsbury's or Dr. Tuckey's book. It is scarcely our province here to express our individual opinion of the phenomena they describe, and which the authors so fully believe in, but we cannot better conclude this notice than by quoting the words of an eminent writer of the last generation, not a man of science, but a keen and sympathetic observer of human nature: "I replied that these practices had fallen much into disuse or contempt, partly because of the gross impostures to which they had been made subservient, and partly because, even where the effects upon certain abnormal constitutions were genuinely produced, the effects, when fairly examined and analyzed, were very unsatisfactory—not to be relied upon for any systematic truthfulness or any practical purpose, and rendered very mischievous to credulous persons by the superstitions they tended to produce."—*Med. and Chir. Jour.*, Liverpool.

"Diseases of the Kidneys and Bladder:" A Text-book for Students of Medicine. By W. F. McNutt, M.D., M.R.C.S., Ed., L.R.C.P. Ed., Professor of the Principles and Practice of Medicine, of the University of California; Professor of the Diseases of the Kidneys and Heart, Postgraduate Department of the University of California; Consulting Physician and Surgeon to St. Mary's Hospital and to the Children's Hospital. Philadelphia: J. B. Lippincott Company, 1893. Pp. 242 (Price $2.50).

Works upon this subject are numerous, and a new one can hardly be said to have been demanded by the profession. Nevertheless, the author has given us a very good book. It is based upon lectures delivered at the University of California, and makes no claim of being more than a text-book for medical students. As such it is far better than the ordinary student's manual or compend. It is also well arranged as a book of ready reference, but the practicing physician should have in his library something more complete and extensive upon this important subject.

A weak point in most works upon kidney disease is the unsatisfactory manner in which the general subject of urine and its changes is treated. The significance of the various modifications which take place in color, reaction, gravity and quantity should be thoroughly explained as well as the clinical meaning of the changes of the chemical constituents. This the author has done very satisfactorily, but even more space might properly have been devoted to the subject. Instructions regarding urinary analysis are good, but more space should have been given to casts and the detection of the different varieties.

The various diseases of the kidneys known by the general name of Bright's disease are considered under the headings of *tubular nephritis*, in which the tubules are primarily involved; *interstitial nephritis*, in which the inflammation begins in the connective tissues; *nephritis*, in which the whole organ is involved, and, *amyloid degeneration*, in which the disease originates in the blood-vessels. This is a rational and clear classification of a subject much cloud ed by bad nomenclature. The propriety of including diabetis in such a work is very doubtful, but the chapter upon that subject is a good one.

"The Ready Reference Hand-book of Diseases of the Skin." By Geo. Thomas Jackson, M.D., Chief of Clinic and Instructor in Derma tology, College of Physicians and Surgeons, N. Y.; Professor of Dermatology in the Woman's Medical College of the New York Infirmary, etc. With fifty illustrations; pp. 541: Philadelphia: Lea Bros. & Co., 1892.

The book opens with Therapeutic Notes on some of the newer remedies with which the physician is daily presented. Bassorin, Plasment and Medicated Soaps are well spoken of, while Gelatin preparations are justly condemned. No "classification" is attempted. Some "Dermatological Don'ts" aim to warn the practitioners against many pitfalls.

Part II. is devoted to an alphabetical consideration of all skin diseases. It offers a brief and practical "reference," which gives all that is known of the subject up to date. It is remarkable how the author has managed to offer so much in so small a compass. The article on Chromophytosis may serve as an illustration. It would seem unnecessary to offer so many formulæ and remedies, if "one of the pleasantest ways of curing the disease is to have the patient scrub his skin thoroughly with soap and water, preferably soft soap, and then dab on, twice a day, a solution of hyposulphite soda, one drachm to the ounce." An appendix, containing many "well-tried formulæ," closes this bright volume.

Pictures for Physicians' Libraries and Offices. Published by Wm. Wood & Co., New York.

We have received "Professor Billroth's Surgical Clinic," a reproduction of an heroic painting 24 x 32, on heavy cardboard. No more beautiful adornment for a library could be obtained.

A Manual of Medical Jurisprudence and Toxicology, by Henry C. Chapman, M.A., Prof. of Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College of Philadelphia, etc. With 36 illustrations. Price $1.25 net. Philadelphia: W. B. Saunders, 913 Walnut Street, 1892.

The works hitherto prepared on the subject have usually been the offspring of professors of chemistry. Hence the strictly scientific element predominated, frequently to the exclusion of important practical points which the physician who is suddenly called upon by a coroner, often longs to obtain.

This book bears the imprint of practical experience in medical jurisprudence. It will therefore be of great use, especially to that large class of practitioners in the cities and towns in which no regular expert is appointed. The latter, also, will find in it many valuable hints regarding the conduct of inquiries into sudden or criminal deaths.

"Annual of the Universal Medical Sciences: A yearly report of the progress of the general Sanitary Sciences throughout the world." Edited by Charles E. Sajous, M.D., and seventy associate editors. For the year 1891. F. A. Davis, Publisher.

This invaluable compendium of the progress of medical science during the last year has not been noticed in this journal owing to inadvertence. This work consists of five volumes of several hundred pages each. We think it is of special value to the general practitioner, who is here able to find the latest researches in every branch of medicine or surgery, which he could only get otherwise by reading a vast number of periodicals, to do which the average physician has not the time.

In Vol. I. we notice in the treatment of tuberculosis by the open-air method that experiment has been tried at some German health resort of allowing the patients to sleep out of doors in the pine woods, the patients sleeping better than usual. Among the cause for asthmas we find according to Edson, are phimosis and constriction of the sphincter muscles.

In the treatment of dysentery, Lemoine used in 54 cases rectal injections of 6 ounces of corrosive sublimate 1 to 5,000 three times a day; later 1 to 3,000, with successin every case; the cases were cured in from one to three days. No systemic poisoning.

Gräser has found that Jambul, in experimental diabetes in dogs, will greatly reduce the amount of sugar.

The second volume begins with an excellent section on the diseases of the brain, in which there is little new, but many facts have been confirmed.

The whole series is found to be filled with very interesting matter, the vast amount of which makes it very difficult to pick out any special facts for comment.

Every physician who wishes to keep up with the times ought to have these volumes in his library.

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SANITARY.

Canine Madness.—As we erroneously attach the ideas of glanders among domestic animals to the horse only, so we connect the idea of rabies (hydrophobia of man) with the dog. Not man alone, however, but all domestic animals contract this disease when inoculated with the mad dog's tooth, and in all alike the carcass becomes infectious. I must add that the disease does not always present itself in the violent or delirious form, but that in a certain number the apathetic or paralytic symptoms predominate from the first, and in the absence of an intelligent inspection the meat of such an animal may be thrown upon the market and may fatally infect those that partake of it. That this disease can be prevented by inoculation with the toxines has been shown by the admirable work of Pasteur; yet the enthusiastic application of his method to the as yet sound animal is not without its drawbacks and dangers, unless the animal so inoculated is carefully secluded from others for a length of time. It is a notorious fact that there such inoculations have been most extensively adopted rabies has been unusually prevalent in animals, a circumstance that calls for intelligent supervision of our meat-products in this direction.

Tetanus, or lockjaw, is nearly related to rabies. Its germ (*bacillus tetani*) is conveyed from infected soil to man or beast, and from animal to animal indefinitely. Like rabies, it makes its localization in the great nerve-centres, as the general racking muscular spasms bear all too frequent evidence. Like rabies too, it attacks all warm-blooded animals, and thus man may suffer by infection from any creature so diseased, or from contaminated dwellings, instruments, or soil. While it is true that this malady can be cured by the blood-serum of an animal that has survived an attack, and while it is further true that the system may be fortified against it by inoculation with the ptomaines and toxines produced during the disease, such truths can never justify the lack of such skilful professional inspection of our meats and meat-producing animals as shall protect the community from an affection at once so agonizing and so redoubtable.

MILK-SICKNESS.—In a number of localities that have fallen behind in the race of agricultural improvement there lingers a disease, indigenous to the soil, communicable to all mammals and effecting the nervous centres so as to nearly abolish the functions of the brain and spinal cord. It produces, among other things, profound torpor of the digestive functions, general nervous tremors, loss of control of the voluntary muscles, and great depression of the intellectual functions, amounting in man to loss of the moral sense. If survival takes place at all, it is at the expense of rational and moral qualities, as a result of which continued existence is rendered altogether undesirable. A dangerous feature of this disease is that, if it attacks a milch-cow, most of the poisonous products are secreted in the milk, and the cow shows only slight signs of illness. The contaminated milk, butter, and cheese, however, prove most pernicious to those who consume them; hence the disease is known as *milk-sickness.* Physicians practising in *milk-sick* districts say that such cases are not altogether absent from our large cities, being caused by the meat, butter, and cheese shipped from such contaminated districts, and that certain obscure cases of intestinal torpor, brain-prostration, and mental hebetude are to be thus explained. It is true that milk-sickness is an affection confined within very narrow limits, yet, like other deadly contagia, it could be largely obviated by a strict municipal professional control of all meats offered for sale.

FOOT-AND-MOUTH DISEASE is fortunately not a present denizen of this continent, but, when it does secure a footing on our shores, it threatens all mammals, and through the contaminated milk is liable to carry off our children by an acute digestive disorder.

ACTINOMYCOSIS, the LUMP-JAW of cattle, is common in man and other animals, attacking not the jaws alone, but the tongue, face, throat, abdominal organs, the walls of the chest and belly, and even the brain. As the disease is due to a slowly growing cryptogam, it has been common practice in Europe to cut off the diseased portion and put the remainder of the carcass on the market *as sound beef* forsooth. Some great feeders and packers connected with the Whiskey Trust are contesting in the courts of Illinois their right to do the same. A sound sanitary system, recognizing that this vegetable parasite can only proceed from the seeds of a similar pre-existing growth, that the seeds from any such growth may develop when planted on any susceptible raw surface or follicular recess of the body, and that its presence in isolated form in such a secluded organ as the brain proves the conveyance of the seeds by the animal fluids, must recognize that the removal of the visible deposits is no sufficient guaranty, and that the condemnation of the entire affected carcass is demanded. It is quite true that the thorough cooking of the meat would render it wholesome, but the same remark would apply to trichinous flesh, or to any meat in which the dangerous factor is a living organism. That man suffers extensively from the disease is witnessed by reports in the medical journals of from two hundred to three hundred cases in the course of a few years past. The danger is, therefore, far enough from being a merely imaginary one.

I need not try your patience by following this list further. I might speak of *malignant edema*, and other forms of *septicemia*, of *erysipelas* of *pyemia*, of *gangrene*, of *echinococcus*, of the *beef and pork tapeworms*, of *trichinosis*, the of *infective osteitis* of young animals, and of still other infections and parasites that we reciprocate with our brute possessions. I might speak of the leucomaines and toxines of over exertion and excitement, and of the ptomaines and other poisons of decomposing and putrid meats, of the inoculation of live stock with animal venoms, of the impregnation of the flesh with vegetable narcotics, which, though harmless to certain herbivora, are deadly to man, and of the presence of certain inorganic agents, which like phosphorus are most injurious to the human organism. I might go on to show that in all conditions of high fever and in various other forms of disease the flesh becomes unwholesome and innutritious. Finally, I might go over the whole list of zymotic diseases that respect the human family, but are contagious from animal to animal, decimating herds, depressing agriculture, and reducing the quantity and raising the price of meat.

I have said enough, however, to show that comparative pathology at the end of the nineteenth century is such as to justify and demand a scientific inspection of our live stock offered for food or furnishing dairy products, and no less so of carcasses presented for human consumption. By scientific inspection I mean, not the untaught glance of the man who has graduated from the stockyards, the shambles, or the army commissariat, but the skillful scrutiny of the professional man, trained in comparative pathology, up to date in the sciences of bacteriology and parasitism, and having at his command modern methods of work and instruments of precision. I cannot too much deplore the low estimate put by the public on such work. The political representatives of this State at Albany voiced the general ignorance in enacting a law giving the title of veterinary surgeon to all who would testify that they had prescribed medicinally for sick animals for a period of three yaers, and now every country in this State has its crowd of registered veterinarians, utterly innocent of all knowledge that goes to make up the armamentarium of the comparative pathologist, but nevertheless duly licensed to poison, maim, and slay the valuable flocks and herds of the Empire State. A few days ago a gentleman whose horse had his hoof wrenched off in crossing a railroad track was told by the superintendent of the road that he should have applied to him and he would have sent him to the best verterinarian in New York. The practitioner so designated by the superintendent turned out to be one of those registered veterinary surgeons who had graduated from the stable, and by act of the Legislature had been endowed with all the rights and immunities that pertain th the comparative pathologist. The gentleman, however, knew better, and saved his horse.

If the action of the Legislature and of the railroad magnates is to be taken as a proper gauge of public opinion, it is not surprising that New York has done next to nothing, as a State, for the education of the veterinary physician and sanitarian. Such education has been left to private enterprise, and as a matter of course it must be restricted by financial considerations, and the length and thoroughness of the course of study must remain a consideration secondary to the resultant income. It is useless to deny that veterinary education has suffered seriously from this cause, so that the possession of a diploma of one of the schools is not necessarily a guaranty that the owner is a desirably educated man. He has received some training, however, in the fundamental principles of comparative disease and medicine, and if his preliminary education is such as to permit it, and if he is sufficiently industrious, he can carry on his education and make himself an accomplished man.

In Europe, with a system of veterinary schools equipped and controlled by government, they do better. The matriculant must be B.S. or B.L., or he must hold a first-class professional certificate from a gymnasium, and must thereafter pursue a course of study for four entire years before he can present himself for the final examination for a degree. The records show that even then not more than one third secure the coveted diploma, and the remainder have to take a fifth or even a sixth year before that desired goal is reached.

If America could have similar government colleges we would be enabled to secure veterinary sanitary officials of the high quality required. In the absence of government schools, something should be done by some of our wealthy universities; but even with them we see as yet hardly the first faint ray of recognition of this great need of the country. Each institution earnestly competes with the others in establishing rival schools of classics, of the general sciences, of philosophy, and many in developing colleges of economics, of law, of agriculture, of architecture, of engineer-ing, of mechanics, of medicine even; but this one subject, which lies at the foundation of all sanitary control of our meats and dairy products, of the preservation and soundness of $2,000,000,000 worth of live stock destined for human consumption, the pathology of our great animal industry, which is essential to the permanent fertility of our soil, is persistently ignored. The University of Pennsylvania and Harvard University have now made a beginning, and we may hope to see a better recognition of this subject in the future.

Of our 43,400,000 cattle, it is estimated that 3 per cent. are tuberculous, while the ratio in dairy cows rises much higher. If, however, we count only 2 per cent. on our 95,200,000 cattle and swine, we have in round numbers 2,000,000 domestic animals daily exposing man and beast to this terrible contagion, and we have a large proportion of these yearly sold from the butchers' stalls as human food. Though we ignore all the other animal diseases communicable to man, and confine our attention to this alone, we may well ask, in the light of our sanitary knowledge of to-day, Is it less than criminal to neglect this source of danger, so manifest and so preventable, or to delay educating men for this sanitary service?

The education of efficient men is, however, not enough. Arrangements must be made whereby these men will be enabled to perform their work with system and thoroughness. Our perfunctory plan of inspecting the carcass in the butchers' stalls is utterly insufficient. Some contagions that render the meat deadly may at given stages of the disease show to the unaided eye little or nothing abnormal on inspection of the dressed carcass. Splenic apoplexy is a notorious example of this. It follows that the subject must be made to pass the scrutiny of the skilled eye before death and during slaughtering, and that instruments and methods of precision must be called into requisition whenever they may be needed. Such inspection, however, often becomes practically impossible in the private slaughter-house, where the proprietor can control the opening and closing of the doors, the hours of slaughter, the disposal of the products, etc. To secure a satisfactory inspection, the abattoir must be a public municipal institution, under strict regulations, and in which all butchers may hire at low rates the facilities necessary for slaughtering and utilizing the products. Apart altogether from the sanitary inspection of meats, this has been generally found to be the most economical, cleanly, inoffensive and in every way most desirable method; when, therefore, it is also the only method that can insure that the inspection shall be satisfactory, it may be held imperative on every city to adopt it. The advantages of one central abattoir appear to have been first realized by a guild of Roman butchers in the days of the ancient empire, but the true municipal abattoir, owned and controlled by the city, we owe to the first

Napoleon, who projected those of Paris in the later years of his reign, showing a wise example which has since been followed by nearly all of the great cities of Europe. The concentration of the work of slaughtering has been attempted in Boston, Philadelphia and New Orleans, and to a lesser extent in New York, but in nearly every case the ownership has been vested in a private corporation, so that the greatest benefits to the butcher and the public have failed of realization. To give an example of the economy of municipal ownership, the Edinburgh abattoir rents a slaughtering booth, pen and yard, with all facilities for the utilization of the products, for $40 a year. To the butcher, therefore, it is a real economy, and this object must never be lost sight of in sanitary administration. The community has a right to protect its health by the control of slaughter-houses and the rigid scrutiny of all sources of its meat-supplies; but if in so doing it imposes any undue or unnecessary burden on the honorable butcher, it will only serve to arouse opposition and defeat its own ends. Hence the granting of a charter to any company to erect and maintain an exclusive abattoir is, in my opinion, a most unwise procedure. A public building, owned by the city, controlled by the health board, and conducted on principles specially favorable to the butcher, is the ideal provision, and such an establishment faithfully administered must soon establish its claim to permanence.

As regards the dressed-meat trade, it is manifest that as yet the same strict inspection cannot be applied. It is to be hoped, however, that ere long our cities will be supplied with carcasses stamped with a certificate of soundness, as is now furnished with the meat shipped to Europe, and that the authorities may be able to obtain the assurance of the thoroughness and reliability of such inspections, whether conducted by government or municipal agents.

Like all reforms, this sanitary inspection of meat and meats-sources will be opposed on the ground that what was good enough for our fathers can be safely borne with. Such an argument, however, proves too much. Could Buffalo maintain her prosperity if the lakes were cleared of all steamers and the traffic once more remanded to sailing craft? Could her business be conducted in the absence of telegraphs, telephones, gas and electric lighting systems? Could she safely abolish her sewage system or her steam fire-engines? Would it be less than criminal to go back even to untrapped or unventilated sewers? Could the modern surgeon be tolerated if he ignored alike anæsthetics and aseptic operations?

Every age has it own status of knowledge, and such knowledge entails a corresponding measure of responsibility. What was an advanced position for our great-grandparents would be a reprehensibly antiquated and effete measure in our own day, clogging the wheels of progress and dooming a community or nation to decadence. It is true to-day as in the days of Isaiah, "The nation and people that will not serve the Lord shall perish, yea, that people shall be utterly wasted" (Isa. 62: 12). With our fuller knowledge of the laws of God's universe, we have a greater trust imposed upon us, and unless we recognize these laws and harmonize ourselves with them in every sphere of human activity, we shall fail of our stewardship and lag behind in the general progress. There is a profound truth in the Socratic aphorism, "Vice is ignorance; virtue is knowledge." We can modernize it by saying, "To ignore the knowledge of to-day is vicious; to avail of it and practice it is virtuous." Whenever we step aside from a utilization of all available knowledge and skill for the advancement of the material prosperity of the people and the general sanitation we become recreant to our trust, and no consideration of petty economy, of party success, or of national indebtedness to an unfit candidate can remove our action from the category of the vicious and destructive. In regard to the main subject before us—the inspection of animals and meats—we have the highest moral as well as material reasons for securing skilled and honest officials. The movement is destined to conserve the numbers and health of our live stock, without which the native fertility of our soil must steadily decline, and it is destined to protect that most sacred of all trusts, the health and lives of our people, and in consequence the power and prosperity of the nation.—*Medical News.*

SOME druggists of a Colorado town, upon complaint of saloon men, have been arrested on the charge of selling liquor without license. The saloonists claim that the station agent showed them receipts proving that the druggists received two barrels of whiskey to every one received by the saloon men, this fact indicating to the latter that the druggists were doing a thriving business, and they did not propose to stand it, as they paid an annual license of $500, while the druggists paid neither government nor State tax. The case was dismissed by the justice upon request of the saloon men, as the druggists had agreed to pay the costs and signed a bond not to sell any liquor for one year without taking out a retail liquor license.—*Pharmaceutical Era.*

THYMOTOL is a name proposed, and is a more descriptive and especially a more rational appellative by some writers for dithymol—diodide, or as it is generally known, aristol.

P. ROSELLI(*Rif. Med.*, July 7, 1892) encouraged by the favorable results of numerous experiments on rabbits, has tried dermatol in the human subject in twenty-five cases of pustular conjunctivitis, fourteen of simple or phlyctenular keratitis, eleven of parenchymatous keratitis, nine of ulcer of the cornea, five of trachoma and pannus, four of blepharitis, three of kerato-hypopyon with complete infiltration of the cornea, and two of diphtherial conjunctivitis. The insufflation of dermatol in cases of pustular conjuctivitis of scrofulous origin, with or without the simultaneous administration of the iodides, gave excellent results. Good results were also obtained in cases of corneal opacity and simple and parenchymatous keratitis, iodides being given internally and atropine being instilled when indicated. Dermatol was found useful in corneal ulcers, especially those of traumatic origin, and also in the cases of kerato-hypopyon after emptying the anterior chamber. In blepharitis it was of little or no use. It proved very serviceable in the cases of pannus, but no effect was observed in the trachoma cases. In the cases of diphtherial conjunctivitis the insufflation of dermatol modified the secretion and prevented the formation of false membranes.

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MISCELLANEOUS.

What the Public should Know about Scarlatina.—Scarlet fever (called also scarlet rash, canker rash, malignant sore throat, etc.) is one of the infectious diseases distinguished by its peculiar rash or "eruption." The essential facts of this disease needful to be known for its prevention or restriction are:

First—That its special infection is developed in the eruption in the skin, and given off thence to persons and clothing, and to bedding and other things in occupied rooms, and that it continues to be given off constantly till the skin is entirely well and all scruff or scruffiness has entirely disappeared.

Second—That the slightest attack of the disease in one child may provoke a severe attack in another exposed to it, and that when it is epidemic a large proportion of the cases are often of so slight a type as not to be recognized at first, or, often, till the affection has been given to others.

Third—The period of "incubation" (time from taking the infection till the first symptoms appear) is rarely longer than seven days (one week), sometimes but a few hours.

Fourth—The patient is infectious, and so dangerous to others, for at least forty days, and as a rule for seven or eight weeks, *i.e.*, till the skin is entirely well and free of scruff, particularly on the palms of the hands and soles of the feet.

Fifth—The infection preserves its virulence in clothing and bedding hung up in closets or packed in trunks, clothing of the patient or his attendant or others exposed to him. So stored, the infection clings to such things sometimes for months, ready when the article is shaken in the air to float off and infect the nearest child.

Sixth—Boiling water or a strong solution of quicklime will destroy this infection in clothing or bedding, and the last will do the same for floors and walls if freely applied. On the person of the sick a simple ointment (one part mutton tallow, two parts fresh lard melted separately and mixed thoroughly till cold) is the best and easiest means of limiting the spread of the infection. Used all over the body, it does two things —relieves the fever and itching of the rash, and confines the loose particles of skin containing virus to its surface or to the body, clothing or the sheets of the bed, thus preventing its escape into the air.—*Minnesota State Board of Health.*

BRILLIANT PRECOCIOUS CHILDREN.—Our readers will find a very interesting and instructive article in the *North American Review* for June last. A notice of the article was crowded out of our last issue, but its importance warrants us in calling attention to it at this time. Dr. Henry S. Williams, the superintendent of Randall's Island Hospital, contributes an article, dealing with those individuals known as "cranks." He calls their disease "paranoia"; its invariable symptom is "the presence of systematized delusions of persecution." The disease is usually the result of inherited mental unstability. The paranoiac temperament may be foreseen even in the child. Dr. Williams says such a child is morbidly sensitive and has great egotism. He then says: "Unfortunately the parents of such a child usually take pride in the egotism that leads to eccentric acts; while the extreme precocity of many of these subjects causes their egotism to be fostered by ill-judged praise. Usually the child of paranoiac temperament is the genius of the family and the show pupil at school. Pampered and praised, even though the entire household becomes subordinated to his will, he is not satisfied, believing that he does not receive his dues. With that idea, the germs of paranoia are planted in his mind, and, of course, the brilliant child is the one whose mental training will be forced. The other children may stay at home, but this one must be sent to college and fitted for one of the learned professions. Often he is an 'honor' man at college, and he starts out into the world with every seeming prospect of an eminently prosperous career." Dr. Williams then describes how the young person may break down while still in college, although usually the critical time does not come until he has gone out into the world. Even then a successful career and contact with the world may correct the morbid tendencies. But let reverses come, especially let the vanity be wounded, and the situation is changed. Selfishness and suspicion assert themselves, and the victim easily becomes dangerous. He is likely to devote his attention to some reform for revolutionizing society or the government. He is a man with a mission. He may be a fanatic, a socialist, or an anarchist, depending largely upon his native temperament. Spiritualism, faith cure, Christian science, theosophy, and any new fad, are his meat and drink. The article concludes by giving advice to parents and to all engaged in directing the minds of children. Whenever there comes under your care one of those eccentric, brilliant, precocious children whom you are prone to regard as a budding genius, learn to believe that you have probably to do with incipient paranoia instead, and govern yourself accordingly. By restraining the energies and checking the eccentricities of such a child, you may do something toward molding an aberrant mind back toward normality; by stimulating the energies and fostering the germs of "genius" you may help to prepare a victim for an asylum or a prison.—*The National Medical Review.*

Doctors as Popular Leaders.—A statement having been made in a German professional work to the effect that Mr. Gladstone had prophesied that doctors would become the leaders of the people, a correspondent wrote to the Prime Minister for the purpose of ascertaining the truth of the matter. In reply Mr. Gladstone said: "So far as regards the exact words cited in your letter, I cannot positively say aye or no, and I rather think that I should in using them have added some qualifying or limited expressions. But it is certainly a fact that for a very long time I have believed the medical profession to be both in a state of absolute advance from the progress of its science—this, it may be said, is mere commonplace—and of relative advance from the particular features attaching to our civilization in its onward movement." The statement and query evidently refer to the speech made by Mr. Gladstone at the banquet held in the Great Hall of Lincoln's Inn, on the occasion of the meeting of the British Medical Association in London on August 16, 1873. It may be of interest here to quote the relevant passage in that remarkable speech:

"It has been given to you, gentlemen, I think, to achieve within the memory of living man a degree of real improvement and real advancement such as has perhaps hardly accrued to any other profession. It would be presumptuous in me or any other one not belonging to your ranks to presume to pass a judgment upon the scientific excellence of the physician or surgeon of to day and the physician or surgeon of fifty years ago, and I am aware that fifty years ago, as well as a hundred and a hundred and fifty years ago and more, there were physicians, and there were surgeons whom, as I believe, none of you can either hope or desire individually to surpass. I speak now of the body of the profession, and not of the few—the elect and favored children of fortune and of skill; and speaking of the body of the profession, even as an observer from without, it is impossible for us not to notice the change; it is impossible for us not to see how far more strongly now than of old the medical man of to-day conforms to those general laws of common sense and prudence which are after all universal laws of human life in every one of its departments. It is impossible not to see his greater and more sustained earnestness of purpose, that elevated sense of his professional dignity, that desire to make it subservient to the good of humanity, that general exaltation of his aims in the exercise of the profession. And, gentlemen, in every way as it seems to me, the course of affairs tends to show that this process will continue. Your position has long been, and I think must continue to be, one of constantly increasing influence and power. Never in my life but once before had I the honor of addressing a medical assembly; it was at the Middlesex Hospital, on an occasion when the distinguished staff and the pupils connected with the hospital were assembled; and I think then, some thirty years ago, I ventured to express to them the same opinion, that both they and their profession had before them rapidly opening and extending careers; and I think so, gentlemen, for this reason: that this age is distinguished by an unbounded activity of all the sciences of observation; and that of all the sciences of observation conversant with material things, yours is the noblest."—*British Medical Journal.*

The short paper on "Culture and Professional Success" which appears in the current number of the *New Review* from the pen of the late Sir Morell Mackenzie raises an issue which is always one of very great practical importance, and which is most pertinent at the present epoch. All educational methods are being subjected to the most stringent scrutiny, and the medical profession has been, and still is, engaged in revising its curricula and extending its period of study. Hence, an article like that cited, raising the great question how far general or "liberal" culture, as contrasted with special, technical and professional education, is conducive to professional efficiency and success is worthy of careful attention. The article is strongly in favor of a wide general culture as the best preparation for the more special training which every profession demands from those who aspire to enter it. The author's grounds are various, but they may be summed up under two heads:

first, that such culture confers breadth and flexibility of mind and renders the acquisition of special knowledge easy; and, secondly, that it develops a knowledge of human nature, and hence assists in enabling us to treat our clients or patients, not as mere "cases," but as complex, sensitive and highly organized men and women.

This issue, ancient as it is, appears likely again to be fought out in our own day. There is a strong utilitarian wave of opinion now prevalent, and it is becoming generally assumed as an axiom that all training for a profession should be directed to the special needs and work of that profession, and that liberal studies, however pleasant or refining, must in the stern struggle for existence make way for subjects more practical and more immediately and obviously useful. From these causes arise the sacrifice of Greek, the limited study of Latin, the ignoring of English literature and, on the other hand, the concentration of attention upon physical and biological science. We are no advocates of any abortive and anachronistic attempt to turn medical students into classical or literary pedants as a preparation for the work of the hospital ward or the consulting-room; but we would remind those most imbued with the spirit of the new era that the preparation of the intellect for the reception of knowledge is an object hardly less great and urgent than the character of the knowledge which is to be imparted. We all admit that some such preparation is indispensable. The greatest enthusiast for science will hardly affirm that chemistry, physics and biology afford a sufficient basis for an all-round intellectual development. They are no doubt most important, but their successful prosecution would still leave the student ignorant of the history of his race and of many of the highest and noblest achievements of the human intellect. In medical education we desire, with as little waste of time as possible, to bring trained and disciplined minds to bear on the problems of disease, and the question is in what manner this can be best effected. Many will accept this putting of the case and will ask with derision how the Differential Calculus, the subtleties of Greek grammar, or the Categories of Kant are likely to be helpful.

A sneer of this kind, however rhetorically effective, is not conclusive. The medical student needs strength and grasp of mind; the capacity to note resemblances and differences; the power of determining what amount of evidence is sufficient to warrant a given conclusion; some capacity of reading character, so as to estimate correctly a patient's statements and to eliminate the personal equation. He needs to be cautioned against haste, inaccuracy, prejudice and preconceived opinions, fallacious reasoning, confused or contradictory ideas, want of tact, and many other things. These are formidable requirements, and the question is whether they can be met by any process less tedious and troublesome than that involved in a good preliminary education. The great danger of medical education at the present day is that raw youths with wholly unformed minds and destitute of any correct ideas regarding observation, evidence and reasoning, should be set to dissect snails, mussels and frogs, to look down microscopes, and to handle test-tubes, and come to imagine that little else is necessary. If such methods should extensively prevail, we believe the results would be quite as disastrous as those which flow from an excessive devotion, to the Greek digamma or the higher geometry. Cardinal Newman says in one of his works that we have ample proof that the old methods of instruction by means of the classical languages and mathematical studies are capable of producing flexibility and grasp of mind, and that we have no proof that any other methods are adequate for this purpose.

Apart from purely professional work, we have to consider how best we can promote that mental attitude which helps the practitioner to understand his patient, not only as the subject of disease but as a human being. In the article alluded to above it is justly observed that professional success depends not only upon the power of giving good advice, but upon the capacity of so influencing our patients that they will be inclined to follow that advice when given. Many of the greatest practitioners of medicine have a magnetic influence in this way; but for those not thus exceptionally endowed there is no means of acquiring this power so likely to be successful as a wide knowledge of different subjects—in other words, a good all-round culture. This should enable its possessor to understand different types of mind, to enter into their point of view, and to sympathize with their various difficulties and apprehensions.

We may ask, finally, why so deep a prejudice should exist against the higher culture as a preparation for the professions. We believe the answer given in the paper in the *New Review* is the correct one—viz., that in some cases liberal culture disinclines the mind to devote itself heartily to what are often the dreary details of technical professional knowledge. We are reminded that Sir Benjamin Brodie acknowledged that, nourished as he had been on classical literature, he had great difficulty in bending his mind to the dry details of anatomy. His subsequent greatness is the answer to those who maintain that literary culture is a hindrance to scientific eminence and professional success.—*Lancet.*

"MALLEIN": THE NEW DIAGNOSTIC FOR GLANDERS.—One of the chief difficulties attached to the stamping out of glanders in the stable or elsewhere is the difficulty of recognizing the disease in its earliest stages. Koch's discovery of tuberculin, and its employment for the diagnosis of tuberculosis, awakened the idea of employing in a similar way a product of the bacillus of glanders for the diagnosis of glanders and farcy in suspicious cases.

In February, 1891, it was reported that in the bacteriological laboratory of the Veterinary Institute at Dorpat an extract had been prepared from the bacillus mallei by means of which the diagnosis of the disease in doubtful cases was assured. This welcome news was, however, shortly followed by the melancholy addendum that Dr. Kalning, the discoverer of the preparation had contracted the disease himself, and had died. Kalning's mode of preparation of the extract was as follows: He took 5 grammes of a pure culture of bacillus mallei, added to it 20 cubic centimetres of sterilized distilled water, and placed the mixture in the thermostat at 120° C. for twenty minutes. He repeated this heating process four times in forty-eight hours in the thermostat at 39° C. His next step was to filter the mixture through a porcelain filter under pressure; thus he obtained 12 cubic centimetres of a clear yellow liquid, which was again exposed for fifteen minutes to a temperature of 20° C. in the thermostat. This liquid was used for sub cutaneous injection in the horse, 1 cubic centimetre being used for each animal. Of five horses injected, two were sound, two were manifestly glandered, a fifth was inoculated with glanders at the same time the subcutaneous injection was made. During the next four-and-twenty hours the injection caused no noteworthy rise of temperature in the two sound horses, but in the other three the temperature rose in the first thirteen hours from 38.5°, 38.0°, 38.6°, to 40.5°, 40.7°, and 41.3° C. *Post-mortem* examination of these three horses left no doubt of all of them being really glandered.

In a way similar to that of the unfortunate Kalning, but independently of him, Dr. Preusse, veterinary surgeon at Dantzic, attempted the preparation of an extract of the glanders bacillus. Preusse used for this purpose old, dried-up cultures of the bacillus mallei grown on potato; these he steeped for several days in a mixture of water and glycerine (equal parts), at the temperature of the body (38° C.). The extract he filtered several times, and sterilized in the steam bath. It was finally an imperfectly clear, dark yellow, oily liquid, of neutral or faintly acid reaction; it possessed a characteristic odor. Preusse tried the action of this extract first of all on guinea-pigs he had inoculated with glanders. Later in the year he tried it on six horses belonging to certain large stables in which glanders had just previously broken out; none of the six horses, however, showed at the time of his experiments any unequivocal sign of being themselves glandered. The result of the trial on the horses was most striking. In five of them a considerable increase of temperature occurred, the maximum being attained about fifteen hours after the first injection, about eight hours after a second; the rise amounted to as much as 2.2° C. In the case of the sixth horse—a young foal—a rise of temperature amounting only to 0.5° C. ensued seven hours after the first injection, and no perceptible rise at all followed the second. The first five horses on the succeeding day showed lassitude; the foal was as well as it had been previously. *Post-mortem* examination of all six was made twenty-four hours later. Unmistakable evidence of glanders was discovered in the first five horses, but not in the young foal. The next trial was performed on a horse known to be sound; it was inoculated on three occasions with extract of the bacillus, and each time the temperature remained within the limits of health for the forty-two hours following the injection. In a horse showing manifest symptoms of the disease the rectal temperature ran up 1.5° C. nine hours after the first injection, and more than 2° C. after a second

In the military veterinary school at Berlin a somewhat similar investigation has been pursued by Dr. Pearson, who cultivates virulent growths of glanders bacillus in glycerine-peptone broth at 35° C., and when the rich growths thus obtained are fourteen days old, kills the bacilli by exposure to 80° C. for several hours, and then filters off the fluid through a porcelain filter. The clean fluid thus obtained is sterilized on three successive days by twenty minutes steaming. This sterilized extract he has tested on healthy glandered guinea-pigs in doses of 0.25 to 2.0 cubic centimetres. He finds that in the healthy animals this dose causes a mere trace of local reaction, and must be increased tenfold to produce febrile disturbance. But in the glandered animals even a quarter of a cubic centimetre causes the local symptoms of swelling and redness, and a well-marked febrile reaction.

Pearson's published experiments are less numerous and detailed then are those of Preusse. On Preusse's mallein observations have been repeated by Heyne, Schilling, Peters and Felisch, Dieckerhoff and Lothes, and by Walter. Subcutaneous injections of mallein have been employed by the six first named of these upon, in all, 64 horses. Of the 64 one animal was obviously at the time of injection glandered, but the remaining 63 showed at that time no definite symptoms of the disease. In 41 of the horses a first injection of mallein was followed in about eight hours, and a second in about four hours, by an elevation of temperature altogether above the limits of the normal. In 23 horses no rise of temperature whatever followed the injection. Every one of these 23 cases proved on *post-mortem* examination to be completely free from anatomical signs of glanders. Of the 41 horses which gave a febrile reaction after injection 38 were found by *post-mortem* examination to be actually glandered, but in 2 of the 41 the most careful scrutiny failed to reveal any signs at all of a glanderous condition. In the remaining case one suspicious nodule was discovered in the lung, but did not prove infectious in a guinea-pig inoculated from it. It is found that 0.5 cubic centimetres of the mallein diluted with 5 cubic centimetres of the 1 per cent. aqueous carbolic solution is the medium dose of Preusse's mallein suitable for an adult horse. More recently still Professor Nocard has prepared a mallein with which encouraging results have been obtained at the Pasteur Institute in Paris. There it has been tested on a large number of animals from omnibus stables. Of this extract undiluted, "mallein brute," the dose is rather less than the dose recommended above for "mallein Preusse." At the Brown Institution mallein kindly furnished by M. Roux, of the Institut Pasteur, as well as some prepared by Professor Sherrington at the institution, has for some time been under trial in London. The results at present obtained have not been altogether so thoroughly satisfactory as those reported from Dantzic; but the number of cases in which trial has been made is still insufficient to afford basis for a positive opinion.

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MEDICAL NEWS AND NOTES.

At the recent meeting of the American Orthopedic Association, held in the city of New York, September 20, 21 and 22, 1892, the following officers were elected to serve for the ensuing year: President, Dr. A. J. Steele, St. Louis; vice-presidents, Dr. Samuel Ketch, New York; Dr. Arthur J. Gillette, St. Paul; treasurer, Dr. A. B. Judson, New York; secretary, Dr. John Ridlon, 34 Washington St., Chicago. The next annual meeting will be held in St. Louis, the third week in September, 1893.

Dr. A.G. Hobbs, for the past twelve years Professor of Otology, Ophthalmology and Rhino-Laryngology in the Southern Medical School of Atlanta, has recently resigned that position.

Professor Ponfick has been elected rector of the University of Breslau for the academic year 1892–93.

The German Anthropological Congress will hold its next (twenty-fourth) annual meeting at Hanover in 1893. Professor Virchow has been chosen President, with Professors Waldeyer and Schaafhausen as vice-presidents.

UNIVERSITY OF BERLIN.—The total number of students in the University of Berlin during the last semester was 4,356, of whom 1,185 belonged to the Faculty of Medicine. To these should be added 260 students in the military medical institutions. The teaching staff of the Medical Faculty numbers at present 15 ordinary, 30 extraordinary, and 4 honorary professors, beside 67 *Privat docenten* and 3 teachers of dentistry.

THE AMERICAN ORTHOPEDIC ASSOCIATION.—The following officers were elected at the recent meeting to serve for the ensuing year: President, Dr. A. J. Steele, St. Louis; vice-presidents, Drs. Samuel Ketch, New York, and Arthur Gillette, St. Paul; Treasurer, Dr. A. B. Judson, New York; Secretary, Dr. John Ridlon, Chicago.

THE BOARD OF HEALTH OF SAVANNAH, GA., has adopted a new and sensible plan for securing a quarantine officer at that port. Notice was given that examinations of applicants for the position would be held in New York, Philadelphia, Savannah and New Orleans, the successful candidate to receive $2,000 per annum salary and to hold the office for three years. The examination required the name, age, residence, college, the date of graduation, a statement of the hospital experience, if any, whether the candidate was subject to sea sickness, and his experience in microscopy and bacteriology.—*Medical Record.*

A PRESCRIPTION FOR YOUNG PHYSICIANS.—According to the *British Medical Journal* a distinguished Vienna professor gives the following prescription to all young physicians who call to take leave of him before embarking on their professional career. ℞ Veritatis, humanitatis, fidelitatis, aa infinitum. Misce. Ft. elixir vitæ. Signa: To be used constantly throughout life. It is easy, perhaps, for most men to start with a gook stock of this spiritual elixir, but the difficulty is to find an apothecary who can dispense the prescription when the supply has run out.—*New York Medical Journal.*

ONE of the best of Lawson Tait's axiomatic expressions is: "The road to success in the practice of our art lies not only in the knowledge how to deal with disease, but how to deal with men and women who suffer from it."

STUDENTS at the Universities of Paris, Vienna and Berlin number respectively 9,215, 6,220 and 5,527. In contrast with these there is a college in Sierra Leone which boasts of but twelve students and five professors. The total number of universities in the world, according to the *Minerve*, of Strassburg, is one hundred and forty-seven.

THE new Clinic and Lecture Hall of the Philadelphia Hospital was formally dedicated on October 8 with appropriate ceremonies. Adresses were made by Mayor Stuart, Col. William H. Lambert, Dr. R. G. Curtin, Mr. Charles Lawrence, and others.

HOW TO REMOVE NITRATE OF SILVER STAINS FROM THE FINGERS.—A correspondent of the *Scientific American* gives the following harmless process:

First paint the blackened parts with tincture of iodine; let remain until the black becomes white. The skin will then be red, but by applying ammonia the iodine will be bleached, leaving white instead of black stains of nitrate of silver.

THE recent very remarkable statements of Dr. Monat in regard to the beneficial and non-injurious influence of opium-eating in India are flatly contradicted by Dr. Pringle, who was for some time one of Dr. Monat's subordinate medical officers in Bengal.

MESSRS. LEA BROS. will publish before the close of the year a text book of Nervous and Mental Diseases, by Landon Carter Gray, M.D., Professor of Diseases of the Mind and Nervous System in the New York Polyclinic, octavo, about 800 pages, richly illustrated. This valuable book will be cordially welcomed by the Profession, with whom Dr. Gray stands high as an authority on nervous diseases.

WE NOTICE in the Catalogue of the Kentucky School of Medicine that the school had 489 matriculates and 187 graduates. This is the largest matriculating and graduating class that has ever been in the South or Southwest, and the school is in every way in a most prosperous condition. It owns excellent property in the heart of the city—an elegant building with all modern conveniences on a lot 200x200 feet, fronting on two streets.

THE Louisville Medical College is also in a flourishing condition with a class of 400 students. The faculty have about completed their new college building, the handsomest and most complete, probably, in the United States. It is solid stone, 4 stories high, 185 feet in depth, with a frontage of about 100 feet.

EDITORIAL.

With the close of its fifty-fifth volume the Journal extends greetings to its many friends, and desires to thank them for their appreciative support. At such a time it is eminently proper to look back and review the work of the year that is passed, and to look forward to the year to come. The Journal has ever been mindful of the fact that a medical periodical, as well as a medical practitioner, must be progressive to succeed, and must keep abreast of the times and in touch with the best medical thought of the world. It has been its constant aim to be the exponent of the general practitioner—not the organ of any clique or specialty. Proof of this is at hand in the index of this volume, which shows that no department of medicine has been neglected. During the year the work of many specialists has appeared in these pages, but it has always been prepared or selected with special reference to the needs of the practicing physician. While technical and abstruse discussions are avoided, the conclusions and practical experience of the great masters in each special department are sought and presented in detail.

The same policy which has so long rendered Gaillard's Journal the trusted guide of so many physicians will be adhered to in the future. Original articles by competent and experienced men will continue to be an important feature, and some of the best papers appearing in the various American and British journals will be reproduced in each number. The department of Clinical Records will be an important one, for in this form certain matters of practical value can be presented more satisfactorily than in any other way. A section will be occasionally devoted to Pharmacy and Therapeutics, Sanitary Science, Clinical Lectures and Hospital Reports. Another important feature is that of the department of Abstracts. Here will be found the essential points and conclusions of long and intricate articles in such compact form that the busy man can grasp them with the least possible expenditure of time and labor. The admirable and valuable series of Translations from the French, by Dr. Gamble, will also be continued. Book reviews will continue to be written as they have been in the past, without fear or favor, and solely upon the merits of the books themselves.

Medical science, during 1892, has probably made as much advancement as in any recent year, though nothing startling, nor any especially novel discovery, has been announced. The profession has certainly not been idle. Many valuable papers have appeared and much original work has been done. In this country a constantly increasing number of men are devoting themselves to purely scientific investigation in medicine and subjects closely allied to it. This is rendered possible by the numerous new and well-equipped laboratories and scholarships created by the leading colleges and alumni associations.

Bacteriology has made substantial gains. The great practical value of the discoveries in this department has long been recognized by those familiar with them. The present year will, perhaps, be notable for having brought their true importance to practical medicine forcibly to the attention not only of the general public, but of the profession itself. This has occurred through the cholera epidemic. The fact that we know the germ of the disease, its habits and life history, has added vastly to our ability to cope with it, and has inspired a confidence that could not otherwise have been felt, even in the face of a carefully nurtured "scare" by numerous sensational papers. The ability of sanitary science to absolutely control this dreaded disease, as was done in England, was one of the most brilliant achievements the profession has been able to accomplish in recent years. It does not teach us in this country that we can at once abandon quarantine, but it does show what can be done by properly trained physicians. We must retain quarantine, with all its drawbacks and discomforts, until we are prepared to do what England has done—spend large sums of money in every city and town, train physicians in sanitary science and put them in charge of these matters, instead of intrusting them to politicians. We see with far more clearness than we could a year ago that the study of bacteria is not a novel and interesting pastime to be pursued by men devoted simply to speculative medicine. It is an important department of practical medicine, and has already taken much from the domain of conjecture and planted it firmly in the field of positive knowledge.

In general medicine no radical changes have been seriously proposed, but the numerous discoveries of recent years necessarily produce changes of opinion regarding etiology and pathology, and, following in their wake, changing ideas as to treatment. Pneumonia and empyema have received much attention, both from pathologist and clinician, and their close etiological association is coming to be understood. Tuberculosis has received a large share of attention, and as long as one death in every seven continues to be due to that disease, no more profitable field for labor will be found. The bacillus of Koch is positively believed to be the direct cause, and some of the most earnest work of the past year has been in attempts to discover its exact mode of invasion, and to throw light upon these as yet obscure subjects, predisposition and immunity. Among nervous diseases the study of localization continues to hold a prominent place, and the brain affections of early life have received considerable notice.

The gynæcologists have, as usual, been very active workers. Decided conservatism has been manifested in regard to surgical interference in certain ovarian diseases as well as in numerous minor conditions. Much excellent work has also been done in surgery, particularly in surgery of the abdomen and intestines. Much still continues to be written regarding the diseases of the right iliac fossa, both from the medical and surgical standpoint. Ideas of the surgeon as well as of the physician are undergoing considerable change with increasing knowledge of pathology. There can be no question that surgery is making steady and substantial advancement. The most marked gains during the year have, undoubtedly, been in technique and modifications of established operations. The profession is becoming aroused to the importance of climatology and public hygiene, and in no other department has more decided advancement been made than in that of preventive medicine. Here the physician unassumably plays a noble rôle, which is possible in no other profession: that of spending his best efforts and thought to effect a public good, whereby he will be the loser.

The January number will be unusually rich in original material and valuable selections.

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